GRUMMAN plane news

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Taking off the wraps —

No. 2 F-14 at Calverton for flight testing

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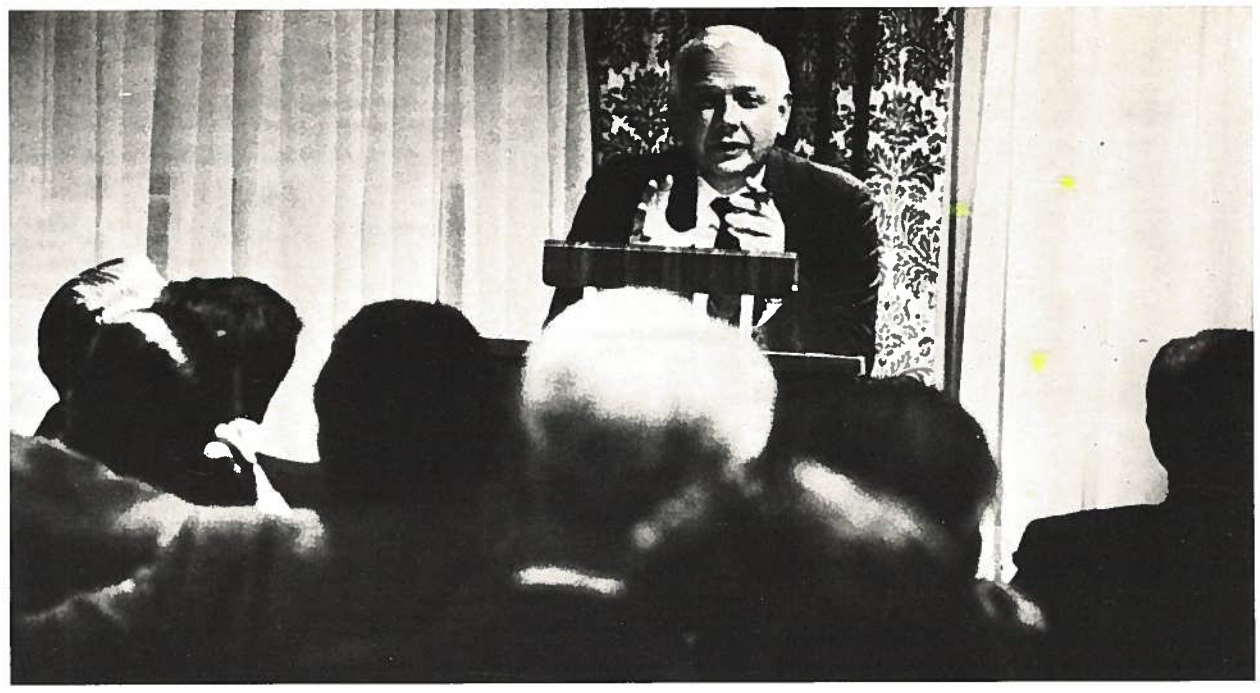
'. . . give them the time, patience, and understanding' —Zarkowsky



'Rap session.' Some old friends and colleagues of Bill Zarkowsky got together recently to roast and toast the new President of Grumman Aerospace. Later in the evening, Zarkowsky imparted his insights on life in general, and Grumman in particular. (Photos by Fred Annette)

About 80 of the top engineers at Grumman got together a couple of weeks ago for a good natured roasting of a former colleague who had gone on to bigger things. That bigger thing: the presidency of Grumman Aerospace; and the guy who got roasted, of course, is Bill Zarkowsky. Before the evening was over he had returned the favor (and then some), and, in the process, left his audience with enough of his personal thoughts to fill the most impressive of briefcases.

Toastmaster George Skurla, who doubles in brass as Vice President and director of Product Engineering, "introduced" the new Grumman President to his old confreres, among them Senior Vice President Grant Hedrick and Vice President Jim Zusi. Recounting Zarkowsky's humble beginnings as a "poor, Polish farm boy" (as Bill is likely to describe himself), Skurla sketched his career at Grumman, coloring it with humorous anecdotes and remarking at one point that since kielbasa and sauerkraut had become cafeteria fare after Zarkowsky had become President, could it be possible that Grummanites would receive Polish hams instead of Christmas turkeys this year?

It was only a build-up, though, to the piece de résistance: the presentation of an enlarged photo of a slim, blonde young man that had appeared in Plane News nearly 30 years ago. And over the smiling face was the question, "Do you remember when?"

As a matter of fact, he did. And a lot more, too. That shock of blond hair now turned white (and somewhat thinner), his almost seamless features showing little wear from the long, arduous hours that seem to be part of the dues a top corporate executive must pay, Zarkowsky recalled, almost poignantly, those early days.

Wrong stop, right place

As if to give credence to his admitted youthful naiveté, he told how he landed his first job in the aircraft industry. He was headed by train from New York (where he was an NYU engineering student) to Farmingdale when he passed what looked like an aircraft plant. He jumped off the train at the next stop and applied not at his original destination, Republic, but at Grumman.

As the laughter subsided, he took his listeners on a far more personal trip through his thoughts than they might have expected, casually mixing past with present, slipping in an amusing anecdote here, pressing home a point there with a knowing smile or an earthy punctuation mark.

And though he was talking to a group of senior engineering managers, their grey hair a testimonial to their years under fire, he seemed to be talking through them across the so-called generation gap to younger engineers at Grumman.

Listen, and see if you hear it too:

"We tramp through life only once and we'd better make the best of it," advised the Grumman President. He came to that realization early in his career at Grumman, he confided, when, in the early '50s, he and several other young engineers were working on a new Mach 3 flight control system. Their budget money had run out and the Company wouldn't give them any more to develop it. Likening that situation to the economic realities of the '70s, he recalled that they pursued their scheme on their own with whatever time they had available and with whatever means they could scrounge, and "I don't doubt that some of you are doing that right now."

Need new ideas to prosper

Stressing that the Company must have new ideas to survive and prosper, he brought this message to his audience: "Make sure you don't subdue the young guys. New ideas start with every one of us. You've got to give them the time, the patience, and the understanding.

"Don't let the stress of daily affairs completely absorb you. Listen. That's what made us.

"And to those who say 'How do you get anybody in this outfit to listen?', if you prevail, somebody will listen. You'll get the audience. Either they'll dispute it, or they'll accept it.

"And when you talk, put it in his perspective—talk in his language and in his theme. Then your idea may become a reality."

Should there be any doubt as to the vital importance of engineering to the Corporation, Zarkowsky dispelled it quickly.

Complimenting the engineering community on its creativity, he asked: "Who else could have put a man on the moon without ever being there — and only through knowledge, experience, and reasoning. And though the moon vehicle had never actually been test-landed on the moon, when the time came, it worked—maybe not perfectly all the time—but certainly damn well. That ability to adapt in time of strife to present circumstances takes knowledge **and** guts." It was the same with the Mohawk, Hawkeye, and Intruder, he said, in saluting many other Company old-timers for their contributions to Grumman. And, he indicated, it **will** be the same with the F-14.

Sounds note of caution

But while on the subject he sounded a note of caution. He urged engineers (and marketing people, too) to adapt to real-life conditions. "Don't always try to sell the next better thing—that something extra that the customer neither needs, nor wants, nor can afford. Someone has to have the perspective to know when good, **not better,** is what we need.

"We must, all of us, try to bring things into focus. The designer must go out into the real world and see how things are actually made; he must see how his design fits into our tool and manufacturing shops because tools and other production equipment are significant investments for any company."

Perhaps, he suggested, engineers should be concerned with more than the technical aspects of a problem. Engineers must learn to think in others' life styles and environments; their ideas and designs must be adaptable to areas of the economy other than aerospace: ground transportation, ecology, and modular housing, to name a few.

"It's a tremendous kind of project for Grumman. We've been dedicated to aircraft and spaceships and highly technical things, but we must also be competitive in housing, waste treatment, and so on."

And then:

"I challenge you to be competitive. It's enjoyable to create—it's something we all have a chance to do. Joe Gavin and his crew fought the system, challenged the whole Company about 10 years ago to get us thinking about something other than aircraft.

"Isn't that the joy of life? Challenge? Creating?

"There are any number of challenges still confront-

(Continued on page 7)

Long ago . . . but not far away. Vice President George Skurla holds photo presented to Bill Zarkowsky as memento of bygone days. Young man in picture is the Grumman Aerospace President, circa 1943.

View future role of hydrofoils as surface interceptors for Fleet

Steady-in-the-waves, Grumman's hydrofoil gunboat PGH-1 Flagstaff continues to confound the doubters as it breezes through gunnery trials for the Navy Electronics Laboratory Center at San Diego, Calif. The craft is proving that it is a stable and dependable gun platform up on its hydrofoils at speeds in excess of 40 knots in sea states up to eight feet.

"I am very pleased with the performance of the craft since the 152 mm weapon was installed," declared its skipper, Lt. (jg) Roger Cooper. "Flying and operating this unique hydrofoil gunboat with the Fleet make this duty the most challenging and stimulating assignment imaginable for both me and my highly trained and hard-working crew."

'No small weapon'

"This is no small weapon Flagstaff is carrying," said Joe Barbetta of Business Development. "To wring out the added capability of the PGH, a six-inch howitzer from a Sheridan tank was installed in the bow. It has a bigger bore than the Navy's newest destroyer guns and is only a little smaller than those of the big cruisers. The six-inch gun has a laser range-finder giving instant, accurate read-outs, and it is capable of hitting a target up to four miles away.

"The evaluation trials, continuing into early June, will determine some of the things we need to know about a small coastal patrol boat, and the effectiveness of the large weapon it is carrying," Barbetta said. "It also has to demonstrate the compatibility between weapon and craft, in that it is structurally sound and able to 'stay together' under the impact of continuous firing. And Flagstaff is showing she can handle it."

Barbetta pointed out that the Navy and Grumman are looking ahead to a new requirement for a patrol hydrofoil guided missile ship (PHM). "We at Grumman are in a position to apply our airborne weapons system integration experience in addition to what has been accomplished in hydrofoils over the past 15 years. In PHM we foresee a craft that reflects the Navy's interest in smaller defensive weapons systems."

'Surface interceptors'

"We view this PHM as a useful high speed addition to the Navy's task force," commented Bob Johnston, PGH Program manager, "to counter a real surface missile threat which confronts our Navy in several operating areas. These new PHM 'surface interceptors' will relieve capital ships that now must be assigned to surveillance type duties."

Flagstaff was built at Grumman's Stuart facility in Florida and had its operational evaluation on the West Coast before going to Vietnam in 1969. For six months it operated out of Da Nang Harbor and then returned to San Diego. Neil Lockwood of Field Service has been furnishing technical support for Flagstaff since its acceptance by the Navy.

Hydrofoils maintain the hull of the craft entirely clear of waves when the boat is operating in high seas. Elimination of hull slamming and pitching results in a smooth, stable platform for a gun or missile installation. In rough weather a craft equipped with foils maintains a much higher speed than similar size displacement craft without foils.

The Navy's future PHM would be about 120 feet long, as compared to 75 feet for PGH Flagstaff, and would have 150-ton displacement as compared to Flagstaff's 67 tons. The boat will be equipped with surface to surface missiles and an anti-aircraft battery.

Asserts Barbetta, "The Navy is going with hydrofoils—and Grumman will be ready for the challenge."

Big gun. **Six-inch howitzer from a Sheridan tank, firing from bow, is testing PGH Flagstaff, Grumman-built and Grumman-designed hydrofoil craft, during gunnery trials off San Diego. Up on hydrofoils, PGH presents steady platform for 152 mm gun, even in 8-foot waves. (Navy photo)**

Moving day. **Hank Spinks of Plant 7 helps guide F-14 No. 2 down from the truck ramp and on to hangar apron. Tomcat had been trucked from Plant 1. Flight tests are imminent. (Photo by Dick Sander)**

Readying No. 2 F-14 for flight

Tomcat No. 2 is now at Calverton.

It moved to the flight facility on April 25. Since then it's gone through fuel calibration and weight runs, instrumentation and preparatory engine runs, and engine runs.

So the first flight of No. 2 is imminent.

At the same time, F-14 A 1-X, the aircraft that is to perform the flight tasks originally planned for No. 1, is getting readied for the Bethpage to Calverton trip.

Immediately behind 1-X is Tomcat No. 4, the plane that is destined to go to Hughes for testing of the AWG-9 missile system. (Tomcat No. 9 will also be Hughes'.)

F-14 No. 3, the structural, will follow No. 4 at the Plant 1 production line.

In addition, two static-test aircraft are being tested in the Plant 5 hangar. And as Joe Cipp, Product Manufacturing manager, points out, "They're the keys. You can't get the flight testing done without the static planes. Usually there's only one plane for static test, but we built two to get the job done more rapidly."

About the cover . . .

After the long, slow, very careful trip from Plant 1, where it was born, Tomcat No. 2, the second of the F-14A family, arrives at Calverton, its twin tails partially "clothed" in order to protect them. As Tomcat arrives after an overnight trip, the men of Calverton's Plant 7 edge their new baby toward its hangar preparatory to running pre-flight tests. (Photo by Dick Sander)

When Tomcat 2 flies, it'll perform the low-speed, stalls, and landing gear tests. Chase planes will fly with it; and the ATS (Automated Telemetry System) will provide real-time tracking of the F-14's in-flight maneuvers both from the ground station and from a modified A-6A chase plane. The people at the ATS are also in voice contact with the Tomcat flight crew. It's much like what has been done in the space flights.

Tomcat 1-X is tagged for high-speed and flutter tests.

Beginning with Tomcat 4, all of the line will be readied at Plant 1 but will be minus wings, stabilizer fins, and engines. Those will be completed at Calverton.

Paul Butler, deputy director for Development Aircraft at Plant 7, talks of the steps that are taken when an F-14 arrives at Calverton:

"We try to perform like-steps together in a systematic way so as to get the aircraft ready for flight. From the management viewpoint, we want to have one man in charge of the whole aircraft at any given stage of its assembly and ground testing. What I mean by that is this: In final assembly, for example, it's Joe Walker as top man and all the other disciplines report to him; as the plane moves to fuel calibration, the man in charge is Pete Krutsch, and everybody, including Walker, goes through him. In this way, responsibility and control are fixed and clear. We think it simplifies the total effort."

This concept of just one man as "king of the hill" is working out in practice. Pragmatically, what could be better?

Tripp sees high NASA priority for new orbiting observatory

The High Energy Astronomy Observatory (HEAO), designed to carry seven scientific experiments for mapping the entire celestial sphere, has moved a step closer to reality. On April 14 a group from Grumman gave an oral presentation to the National Aeronautics and Space Administration, with Senior Vice President Joe Gavin, director of Space Programs, Senior Vice President Dick Hutton, and Dr. Ralph Tripp, Vice President in charge of LM, OAO, HEAO, and LST, heading the Grumman contingent. Reams of printed material documenting the completion of the Phase B study and in support of the presentation followed a week later.

Now a waiting period begins, the "waiting" filled with home work "so we'll be ready to respond to NASA's Request for Proposal, expected in early July," said Frank Canning, Program director.

The decision on who wins the Phase C/D contract is anticipated in November or December, and the winner will be able to proceed with the design and construction of two spacecraft starting next January.

HEAO is an orbiting observatory about three times the size of the Orbiting Astronomical Observatory (OAO); Grumman, teamed with Bendix and Hughes Aircraft, successfully landed a $250,000 contract last spring for a Phase B study. So did TRW, Inc.—and both major contractors are pouring all their knowledge and experience into winning the multi-million dollar C/D design and hardware phase.

High priority

The program has high priority with NASA, says Dr. Tripp, and there is an excellent chance of its being funded in Fiscal Year '72 and after. Beyond the first two spacecraft, HEAO-A and HEAO-B (launch dates mid-1975 and mid-1976), are plans for observatories that could be repaired, refurbished, and possibly retrieved and returned to earth by a Space Shuttle orbiter, Tripp added.

Since Spacecraft A and B, covered by the anticipated contract, are about three times the length of OAO, weigh 10 tons, and accommodate seven experiments for X-ray, gamma ray, or cosmic ray research, the question comes to the surface: "How will they be fabricated?"

"The spacecraft will be of aluminum with riveted joints—a longeron-type structure assembled horizontally in Plant 5. A rotating fixture will facilitate installation of the pre-tested experiments and the spacecraft subsystems," Tripp said. HEAO will use the LM communications system, and its large array of solar cells will furnish the energy for the experiments. "We learned a lot about solar paddles from our long experience on OAO. They will present no problem.

Plan KSC launch

"We are planning HEAO so that it can be assembled and thoroughly tested at Bethpage in order that it can be launched at KSC without significant further testing," Dr. Tripp added.

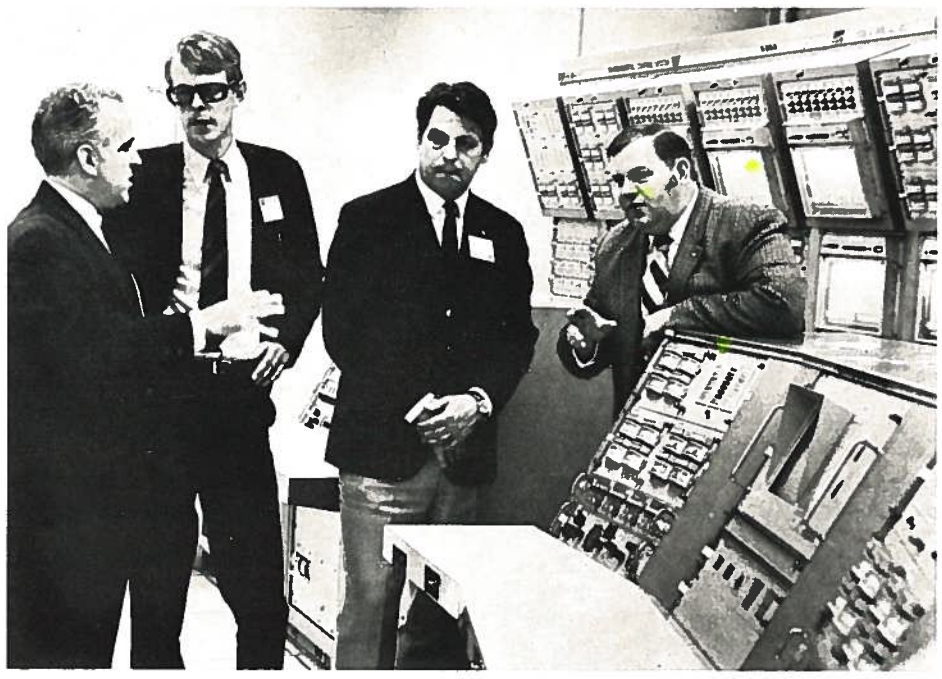
"How are Grumman's chances for winning the Phase C/D contract?" he was asked.

"We are confident we can build the best and cheapest HEAO for NASA," he replied. "The experience Grumman has built up with OAO and the Lunar Module puts us in an excellent position. We have to remember that TRW is a tough adversary, but I do think our chances of winning are excellent."

'Joy to the world'

If you know that Jeremiah is a bullfrog, play guitar, and have a few hours extra to spare, Bob Swanson of Configuration Management, Plant 34, may be looking for you. Bob heads the Grumman rock band which plays at such Company functions as the annual picnic and Christmas concerts, but the group is missing a lead guitarist.

If you can fill the bill, call Bob at Ext. 9646.



Swedish visitors. **Jim Tambini of Product Support Future Sales, Lars Dahlberg and Erik Vintheden, both of the Swedish Air Force Material Directorate, and Dick Spinner of P/S (L to R) are shown at the Plant 5 Automatic Checkout Equipment station, one of many stops in a two-day briefing recently on modern maintenance principles as they relate to the air material area. (Photo by Nat Scherer)**

CALENDAR of events

Notice of events for period May 29 - June 11 should reach Plane News by **Tues., June 1.**

Am. Radio Club: Wed., May 19, 5 p.m., WA 2LQO shack, roof of Plt. 5, Field Day plan. Emmett Goodman, Ext. 87125.

Amer. Inst. of Aero. & Astro.: Sat., May 22, 8 p.m., Four Seasons C. C., Woodbury, ann. dinner dance, $22/couple, members, $27/couple, non-members, $15/student members, $5/new membership. Mrs. Jeanne Smart, 595-3086.

Astro Soc.: Wed., May 19, 5 p.m., Conf. Rm. 2, Plt. 28, gen. mtg. Ed Andersen, Ext. 7044.

Aquatic Assoc.: Tues., May 18, 9 p.m., Larkfield C.C., E. Northport, movies on scuba div.; Grumman Sail. & Yacht. Club (div. Aquatic Assoc.) 1st mtg., Wed., May 26, 5 p.m., Plt. 28 Audit. John Reeves, Ext. 2001.

Chess Club: Tues., 5 p.m., Plt. 3 Cage, tourn. & games. Alex Ikonnikow, Ext. 7592.

Coin Club: Wed., 12:05-12:50, Plt. 25 Vendor Conf. Rms. Ken Hale, Ext. 1936.

Dance Club: Every Tues., 8:30-10 p.m., St. Francis of Assisi, Northgate & Clay Pitts, Greenlawn, ballroom dance classes, $2/session. Len Luke, Ext. 9682.

Duplicate Bridge Club: Thur., 5:45 p.m., Plt. 3 Cafe, reserv. not required, partnerships arranged. Pete Harrington, Ext. 1812.

Ex-Servicemen's Club: First Mon. of month, 7:30 p.m., Plt. 28 Audit., exec. & gen. mtg. Al Kordula, Ext. 87259.

Family Campers: Fri. thru Mon., May 28-31, Memorial Day rally, Fred Mune Camp Grounds, Florida, N. Y. Bill Lord, Ext. 2914.

Fencing Club: Fri., 5 p.m., Plt. 30 Cafe, competitive fencing & instruction. Joe Campisi, Ext. 1134.

Horseback Rid. Club: Every Sun. Caren Carlson, Ext. 2725.

Huntington Toastmaster Club: Mon., May 17, 8 p.m., Allstate Bldg. Educational, effective communication. T. Campbell, Ext. 3157.

Over Forty Club: Sat., May 22, Knights of Columbus Hall, Farmingdale, May Dance. F. Mistretta, Ext. 3630.

Rod & Gun Club: Wed., May 26, 5:30 p.m., John's Oasis, Hazel St., Hicksville, month. mtg. Walter Schillinger, Ext. 57-617.

Ski Club: Wed., May 26, 8:30 p.m., Holiday Manor, Hicksville Rd., Bethpage. Lee Badalamenti, Ext. 2171.

Stamp Club (Bethpage): First 3 Wed. of month, 5 p.m., Plt. 30 Cafe, swap., circuit bk. sales, auctions. Marty Harow, Ext. 9172.

Wgt. Watchers: Every Tues., 4:45-6:45 p.m., Plt. 28 Audit., Mimi Ackerman, W. W. Lecturer. Lee Badalamenti, Ext. 2171.

Army cites Field Rep Paul McDermott for 'can-do' attitude in Mohawk support

He's not in line for Bronze Stars and Oak Leaf Clusters, but Paul McDermott, Grumman Field Service representative, will probably settle for the high praise he has received from the Office of the Assistant Chief of Staff, Intelligence, United States Military Assistance Command, Vietnam. "Your thorough technical knowledge of the OV-1 MOHAWK and timely advice, coupled with a 'can do' attitude, has greatly enhanced the understanding and capabilities of those who are responsible for the operation of this valuable intelligence collection resource," said the official letter of commendation.

McDermott, who has been with Grumman more than 18 years and in Field Service since 1967, also received a Certificate of Achievement for displaying "an exceptional degree of professional competence and devotion to duty in support of the Republic of Vietnam's struggle. . . ." The certificate is signed by Creighton W. Abrams, General, United States Army.

Paul used to teach racing car driving and he raced his own British Cooper. He loves to travel and has been around the world. In two long tours of duty he has made hundreds of flights in both Mohawks and helicopters.

He is the Grumman OV-1 technical representative in Vietnam, and his commendation says, "Your keen interest in maintaining a close liaison with the three Surveillance Airplane Companies has had a pronounced effect on their availability of mission-ready aircraft." He himself says, "Engineering know-how is important, but it's often more important to become a public relations man, a sales engineer, or a diplomat." And that, exactly, is what Paul McDermott is—a diplomat.

Paul McDermott

Honor Schnipper

C. W. Post College has presented its Henry J. Plock Award for 1970 to Joe Schnipper, QC manager of the TACRV Program, for "exceptional scholastic ability" and for his contributions "to engineering and science." Schnipper received his Master's in management engineering from Post College last June. He is active in the American Society for Quality Control and has been invited to speak at its national conference in Chicago May 20. Subject: "Configuration Management."

Arivederci Roma

Robert Aha of Light & Display Systems will give a paper in Rome before the AGARD/NATO meeting May 24-28. Topic: "Requirement for Artificial Intelligence in the Airborne and Space Environments."

Ecosystems exploring potential markets in northern lands

Ecology is a very new field, and Grumman Ecosystems Corp., the newest subsidiary of Grumman Corporation, has been examining projects all over the world that might open up opportunities for Ecosystems' special abilities. Newest and most challenging of these would appear to be one in Greenland, where a dozen or so men will take Ecosystems' Gulfstream I to make a sweeping magnetometer and photographic survey of the rim of the northern half of that great island.

Ecosystems has plans for joining forces this month with a group of business men who are interested in the oil and mineral potential of Greenland and hold exploration rights for about two years. They represent business interests in Denmark, Canada, and the United States and are organized under the direction of Joseph Milner and the Greenarctic Consortium, Edmonton, Alberta, Canada.

Pilot program. **Ray Ryan of Grumman Ecosystems, shown in Ecosystems' Gulfstream I during flight over Arthur Kill, gathers data on contaminants for U.S. Army Corps of Engineers. Usual method of engineers is to search by boat. (Photo by New York Times/Robert Walker)**

"We plan to operate out of Nord, about a thousand miles north of the Arctic Circle," said Bill Schwendler Jr., Executive Vice President of Ecosystems. "That country is quite unexplored, and some areas have never been photographed at all. The ground where we will be working is ice free, and climatically, it's a desert up there. Yes, it does present some logistics problems, like having to ship our own fuel for the airplane. The magnetic and photographic mapping activity will go forward during the summer, and data compilation is scheduled to be completed in late fall."

Hunt water pollution

Closer to home, Ecosystems is just concluding, for the U.S. Army Corps of Engineers, New York District, a contract that snatched headlines in The New York Times as a "spy" story April 30. "Spy Plane Hunts the Polluters" was an account of Ecosystems' Gulfstream I survey of some shore areas in the Manhattan environs. The plane flew sorties by day and again by night, using an infrared line scanner, infrared as well as infrared-sensitive and color film, and cameras with special filters to search out sources that were discharging possible contaminants into the navigable waters along the west shore of the Hudson River below Nyack, in Kill Van Kull and Arthur Kill (between Staten Island and New Jersey), and around Hempstead Harbor, a total distance of about 35 miles. Pollutants are very often of a different temperature than the water into which they flow, and the thermal scanner shows this difference even in the dark. Cameras equipped with various filters can pick out other evidence that might elude official scouts.

Potential market

The Corps of Engineers has depended upon men working in boats to spot illegal outfalls: chemicals, factory waste, cooling-water from industrial plants, refuse from restaurants. This is known as an "Outfall Detection Survey." Ecosystems is hoping that its aerial pilot program of photography, scanning, and interpretation will prove so much more complete than the present system that the N.Y. Corps of Engineers will come back for more. (Corps territory encompasses New York State up to Oswego and eastward to Lake Champlain.)

A project that Ecosystems was negotiating for with Brazil—an aerial mapping survey of the Amazon River basin—would have used side-looking radar. However, "you can't win 'em all." It was a good program Ecosystems was offering, at reasonable cost, Bill Schwendler Jr. emphasized, but the competition in this field is intense.

A contract from Maryland for delineation of wetlands boundaries was completed in January "and the customer was pleased." A promising project of totally different proportions is being investigated by Tom Attridge, Vice President of Operations. This concerns a private company installing an oil drilling rig off the Grand Banks of Newfoundland. To protect its rig from being carried away by icebergs, Ecosystems' A-26 aircraft could here be put to good use, its side-looking radar charting the movement of the icebergs that are not subject to routine Coast Guard surveillance off the Grand Banks.

Night study. **Ecosystems employs thermal infrared line scanner and color and IR-sensitive and color film to ferret out sources of pollution. This was made by them at 3 a.m. Discharges, which are warm, show up in light tones.**

Name Rodriguez for year's study in Sloan Fellowship Program

Joe Rodriguez, in the wake of a long succession of young Grumman executives, has been accepted as a Sloan Fellow at Massachusetts Institute of Technology for 1971-72. He and his family leave for Boston in June.

Rodriguez will be right at home in Boston and Cambridge, since M.I.T. was his alma mater, class of '53. He earned a Bachelor's degree in electrical engineering there and will be working for a Master's in industrial management during the coming year.

Joe Rodriguez

Broad program

The Alfred B. Sloan Fellowship Program annually accepts 50 men from this country and abroad in a program "designed to broaden and develop outstanding but typically specialized young executives for more general and senior management responsibilities in the future." Included in the year's program are group trips to New York, Washington, and Europe.

Before Rodriguez joined Grumman in November of '56, he served two years with the Army Signal Corps and had the dubious pleasure of spending most of that time on duty in Alaska—14 months as commanding officer of a specialized Army outpost where "the winds blew hard and the temperature went down to -40."

After joining Grumman, Joe worked on the F-11 fighter and the airborne early warning system of the WF-2. He moved to Preliminary Design, where he worked on many proposals, and then he devoted five years to the A-6A and its radar systems.

As assistant section head and then section head of RF Engineering, Rodriguez worked on all the Grumman RF programs, including OAO and LM, then moved along to become manager of Electronic Equipment Engineering.

About three years ago, he was assigned to the F-14. "I worked on the F-14 proposal in '68 and stayed with the job through '69 and '70, becoming special assistant to Program Director Mike Pelehach." Just before the F-14 proposal, he spent 10 months on Bill Zarkowsky's staff. Zarkowsky, now President of Grumman Aerospace, was the first of the Sloan Fellows sent to M.I.T. by Grumman (1957-58).

Preceding Rodriguez as a Sloan Fellow is Pete Oram, director of Contracts, who finishes his year with a trip to Europe—part of the course—next month. Tom Kelly, now deputy director of the Space Shuttle Program, was a Fellow in 1969-70.

In the year away from Long Island, Rodriguez, his wife, Carmen, and their children, Brian, Ralph, and little Christina, will be living on Beacon Hill, at 150 Mount Vernon Ave., in Boston.

Ask early registration for Annual Meeting

On Thursday, May 20, the annual Grumman Shareholders Meeting will take place in Hangar 3, Plant 4, Bethpage, beginning at 2 p.m. Grumman Corporate Secretary Larry Rockwell asks the cooperation of those Grumman employees who own Company stock and who plan to attend the meeting. To expedite the orderly and prompt seating of visiting shareholders, it will be necessary to register in advance. Only those persons owning stock as of the record date, April 1, 1971, are eligible to attend.

Grumman personnel who own Company stock and have received a proxy in the mail may pre-register at any Employee Services Office on any working day before May 20. If you have mailed in your proxy and intend to be present at the meeting, check in with your nearest ESO to confirm your intention. A badge sticker will be issued to permit your entrance to the meeting.

Seeing double really no trouble for matched pairs at Plant 33

In 1946, the Experimental Group boasted of having a set of identical twins working with them in Plant 1: Edward and Ellwin Luerssen. Now 25 years later, Ed and Ell, located in Plants 6 and 7, have some competition.

Plant 33 boasts two sets of identical twins: Jacey and Macey Cammarda and George and Gene Quarry.

When Jacey (now Mrs. Frank Abarno) and Macey Cammarda were born 22 years ago on May 7, it wasn't too much of a shock to their parents. Their mother is a twin, and her mother had twin sisters. Their father, Carl Cammarda who works in Plant 33 as an inspector, claims twin cousins.

Jacey and Macey, who work in Support Operations, graduated from Half Hollow Hills High in Huntington in 1966 and went on to the State University at Farmingdale. They earned Associate Degrees in Secretarial Sciences in '68.

Being identical doesn't end with their appearance. They share similar interests: the same foods, the same clothes (but they don't dress alike). Their hobbies are knitting and crocheting and listening to music. "We love rock, some hard rock, and the new rock operas," says Jacey. There is one area where the twins differ. It seems that Macey is 1½ inches taller.

According to Macey, the only problem with being identical twins, "is people tend to treat us as one person. We're not. We are two people who look alike." Jacey nods and adds, "Except for that, having a twin is fun. You always have someone to talk to, someone to do things with. You're never lonely.

"And even though Jacey is married now (she'll be married one year in June), we're still very close," Macey continues. "But best of all, now people are treating us as individuals."

When Jacey was asked if she would mind having twins when she started raising a family, she replied, "No, I wouldn't mind. But they won't be dressed alike. They are going to be individuals." "Definitely," voiced Macey.

In the family

Gene Quarry, one-half of the second set of twins at Plant 33, feels that "The most irritating thing about being a twin is when people meet us for the first time and ask us if we are twins." His brother, George Jr., nods in agreement. And the agreement doesn't end there. They seem to agree on everything.

Twins aren't a novelty in the Quarry home. Their father, George Sr. who works in Production Control in Plant 1, is also a twin.

"We had a pretty normal childhood," remembers George. "And while we never looked for trouble, it seemed to find us. Though we went all through school together, we attended separate classes. And it was after we graduated from Northport High in '59 that we decided to join the Navy." And they did, in December of that year. They served four years, and, says George, "We even were assigned to the same ship. The Navy thought it would be less confusing."

Seven months after being discharged in '64, they came to Grumman and are now located in the Propulsion Department in Plant 33.

Doubles. **It may be difficult for their co-workers at Plant 33 to tell them apart, but being twins presents no trouble for Gene and George Quarry and Macey and Jacey Cammarda. That's Gene and Macey on the left. Or is it . . . ? (Photos by Nat Scherer)**

Do they ever disagree? "How can you disagree with someone who feels as you do about things?" asks Gene. "We both like the same foods, enjoy the same music, mostly folk and hard rock. We both drive Corvettes, and while we like the same clothes we don't dress alike. It makes it easier."

They both admit to being racing buffs. "We love auto racing and we race to win," both claim. And they have the trophies to prove it. They also own a boat and come summer if you happen to be down by the water and see two blond, blue-eyed bachelors racing a boat, you're not seeing double. You're seeing the Quarry twins. But **don't** ask them if they are twins.

Grumman reports sales, earnings

Net earnings of Grumman Corporation for the three months ended March 31, 1971, amounted to $4,574,901 or $.65 per share representing a decrease of 14 percent from earnings of $5,339,992 or $.76 per share for the comparable period in 1970. Sales and other income for the first quarter of 1971 totaled $214,008,304, a decrease of 12 percent from the $242,198,867 recorded for the first three months of 1970.

The decline in sales was due, primarily, to a reduced volume from the Lunar Module program and fewer deliveries of the Gulfstream II.

The reduction in earnings was attributable, principally, to start-up costs and new product and systems development costs generated by the Corporation's subsidiaries: Grumman Data Systems Corporation, Grumman Allied Industries, Inc., and Grumman Ecosystems Corporation. However, the largest part of these non-recurring-type charges have now been written off, and the earnings outlook for these subsidiaries is brighter throughout the remainder of the year. In the first quarter, the earnings of Grumman Aerospace Corporation remained at approximately the level of the first quarter of 1970.

Dividends paid throughout the first three months of 1971 amounted to $.25 per share.

The backlog of $1,098,000,000 shown at March 31, 1971, includes orders not yet funded of approximately $146,000,000 as compared to unfunded orders of $276,000,000 in a backlog of $860,819,000 at March 31, 1970. The backlog includes work authorized for the F-14A, EA-6B, and other programs through 1972. The backlog for each period includes orders under negotiation, only to the extent funded.

Charles Kingsley, former V.P. and General Counsel, dies at 78

Charles Kingsley, retired Vice President and General Counsel of Grumman Aircraft, died May 6 at his home, 81 Davis Rd., Port Washington. He was 78.

He was a native of Buffalo and a graduate of Dartmouth College, Class of 1914. From 1917 to 1919 he served in the U.S. Army Signal Corps as an aviator and an instructor in aviation.

Following his war service, Kingsley studied at Fordham University Law School, where he received his L.L.B. in 1924. Until 1929 he was in private law practice. Then, from 1929 to 1940, he was an attorney for Ingersoll-Rand Company of New York City.

During those years he continued his interest in aviation by acting as a freelance consultant to Grumman Aircraft in its early years. He became its General Counsel in 1940, and in 1954 he was elected Vice President and General Counsel. He retired in 1958.

After his retirement, Kingsley continued a long affiliation with the Manufacturers Aircraft Association, Inc. He was a director of this Association from 1944 to 1966, and its treasurer from 1946 to 1956. The next year he became vice president, and from 1961 to '66 he served as president.

A devotee of bowling and hunting and fishing, he was a familiar figure at the alleys, bowling with great enthusiasm in the Grumman leagues

He is survived by his widow, Margaret, three children, a sister, five grandchildren, and one great grandchild.

Kick off 'Facts and Features'

May 3 brought Grumman a lunchtime program called "Grumman Facts and Features" that added a new dimension to Company communications. The presentation resembles a newscast, containing movie flim clips, slides, and live narration on a variety of subjects.

The response thus far "has been favorable," and Tim Shea, assisted by Gene Cunningham, will be working up a second program as they continue during the remainder of this month to present the first edition to Long Island plants.

Schedule for the next two weeks is: Monday, May 17, Plant 30; Tuesday, May 18, Plant 35; Wednesday, 19, Plant 33; Friday, 21, Plant 15; Monday, 24, Plant 28; Tuesday, 25, Plant 12; Wednesday, 26, Plant 39; Thursday, 27, Plant 4; Friday, 28, Plant 14.

Sewell sees task of test pilot 'trying to go beyond state of the art'

Prep session. **Bob Smyth (L), deputy director of the Flight Acceptance Department, and Chief Test Pilot Chuck Sewell huddle on the flight-test plans for Tomcat No. 2, the aircraft that's to perform low-speed, stall, and landing gear tests. (Photos by Dick Sander)**

Very few—if any—test pilots would disagree with Chuck Sewell, Grumman's new Chief Test Pilot, that executing spins is "the most demanding job of all" in the flight-test book. It might be added that it's the most hazardous, too.

Yet, that's the task Sewell is pursuing, because, as he says, "It's the ultimate in flight testing. You're always exploring. You're testing in the true, real sense."

He knows of what he speaks. He's been in the thick of it ever since graduating from the U. S. Naval Test Pilot School about 10 years ago. That isn't to say that he'd done nothing before that, for he flew as a First Lieutenant division leader in the Marine Corps during the Korean conflict—and was downed by anti-aircraft fire over Pyongyang, North Korea. Despite shrapnel in his right arm he managed to get to the Yellow Sea, where he was picked up by a Navy helicopter.

After convalescence, he went back to the fray and flew more than 100 combat missions. Again he was hit, this time in the left arm. He left Korea with the Distinguished Flying Cross, four Air Medals, and two Purple Hearts. (While hospitalized, by the way, he met a nurse who soon became his wife.)

He became an "exchange fighter pilot" in '55 and spent two years with the Royal Air Force and was a member of its aerobatic team; and he became the first Marine to become an RAF Flight Commander. It was later, after a tour in the Orient and Australia, that he became a test pilot.

Now he was at home! He was test-flying many different models—in fact, more than 100—on the way toward chalking up more than 7,000 flight hours (6,000 in jets). He says his "most interesting project" was test-flying the A-6A Intruder's spin program. "That one," he recalls, "involved one 29-turn asymmetric power spin from 46,000 feet to 4,000 feet." (He also test-flew the OV-1 Mohawk and the F-4 Phantom.).

Chuck flew 220 combat missions as commanding officer of the Black Knights (VMFA-314) in Southeast Asia, winning a Legion of Merit, two Distinguished Flying Crosses, and 15 Air Medals.

What happens. **Chuck Sewell describes some of the maneuvers that must be conducted in test-flying a new aircraft.**

With that kind of experience—and particularly combat and spin-test flying—Chuck joined Grumman in August of 1969. "I flew first flight of the KA-6D, and all its initial test flights and did the EA-6B spin tests and spin demonstrations."

F-14 project pilot

Now he's project pilot for F-14A No. 2, which is to perform low-speed landing approach configurations, stalls, spins, and gun-firings to determine how well the ammunition feeds.

Chuck—unsurprisingly—is a very determined man, uncompromising but yet with a ready smile. He talks matter-of-factly, with a dry professionalism that may mirror his in-flight precision and skill. "You perform the job in many, slow steps," says Chuck. "If a stall turns into a spin you can't get out of, you've got your parachute." It all sounds rhythmic, orderly, well managed, even unexciting, as Chuck talks about it.

But this ultra-composed man reveals the risks:

"You're always pushing the design and performance, trying to go beyond the state of the art. You **have to** improve the state of the art; otherwise, the plane isn't as good as it should be."

Or again:

"You operate at the edge of daylight and darkness. You can't always predict accurately what the plane will do."

Fear is minimal

Apparently fear is of minimum concern.

"Say I'm in a test, the guy on the ground monitoring the flight warns me of anomalies. Besides, you can feel what's happening with the aircraft. You feel an aircraft buffet build-up or the wings rock. You feel it."

Yet, there's that "you never know" area. It looms large, especially to the outsider who doesn't "know" the plane. Chuck commented on that:

"The test pilot should be in on everything about an aircraft from initial design stage through manufacture and test. He has to live with that aircraft, know it inch by inch, know it more thoroughly than anyone else.

"He can help in design, in placement of instruments, in seating style—in just about everything. And when he flies it, he has to be rigorously honest about performance all down the line. Regardless of what the customer or the manufacturer may like to have him say, the pilot must be absolutely honest. He can't compromise. If he does, he's no longer a good test pilot."

He also sees glitches and test-flight performance in what seems to be (at first blush) a rather curious way: "If everything goes well," he says, "then the designers may not have pushed the state of the art as well as they should have."

Test for Fleet operations

The point of all this extensive flight testing is a little more than just proving that the aircraft are sound. What has to be kept in mind is that the aircraft are to go to the Fleet, to pilots less familiar with Tomcat than are the Company's test pilots. So a training school has been established, with "lesson plans" written by Grumman crews. The lessons cover the normal and emergency procedures and all other F-14 information necessary for Navy crews to safely and effectively operate the airplane. The instructions for both the pilot and the Missile Control Officer accurately and thoroughly reflect all aspects of the F-14's flight-test performance.

By the time the aircraft are introduced into the Fleet, then, the prototypes have gone beyond what the typical aircraft would experience. By doing so, Chuck says, "the problems get recognzied and solved early. And of course, there are problems **with any new aircraft.**

"As I see it, Tomcat is going to be an extremely good, sophisticated fighter weapons system, especially because of its advanced avionics. This is a beautiful aircraft."

Zarkowsky . . .

(Continued from page 2)

ing us, but we have to be adaptive," Zarkowsky reminded his audience.

"So get those bull sessions going. Challenge your younger people. You'll see the emergence of new and brightly shining persons. They keep us alive. We need it, and they need it, too."

And soon the meeting was over. And tomorrow? It might well bring, with some of these same men, sharp disagreements over budgets, program progress, and the like.

But for these few hours, the Grumman Aerospace President was more philosopher than planner, more idealist than pragmatist, more counselor than critic. And the essence of his message to all generations: "If you prevail, somebody will listen."

Cadets rally ties booters

When you take on the Cadets of Army **at** West Point, you're usually lucky to get away with your life. The Grumman soccer squad took on the Cadet booting team last Saturday and came back somewhat bloodied (so was the Army) but the rain and mud halted play after the first half with the score tied at two-all. And it was the Army that had to scramble for the tie.

It hasn't been the most successful season for the booters. A couple of weeks ago the Premier team's record was 3-7 and the Reserves were winless with a 0-12 record. At West Point, however, the team representing the combined Premier-Reserve squads jumped to a 1-0 lead over the Cadets as Terry Howell scored a goal on an assist from John Castle. Half-way through the opening period Castle scored a second goal for Grumman, putting the booters ahead 2-0.

West Point scored its first marker as the first period ended, then, with about a minute left to play in the first half, the Cadets hit the nets again, tieing the game.

Heavy rain made the field a veritable sea of mud. Jeff Plunkett of Grumman and a cadet had a collision in the first half hich resulted in facial injuries to both men. Because of the poor playing conditions the game was called at the half.

Top keglers. **From among eight competing teams, Grumman rolled over the rest to win the Industrial Nite Owl Tournament. Those with the victory look are, standing (L to R), Hank Kwiatkowski, Rudy Dunkley, Earl Schroeder, and Ernie Jenkins; kneeling (L to R) are Judge Locke and Walt Cooper. (Photo by Bob Settles)**

Owls sweep pin honors

Captain Rudy Dunkley paced the Grumman Mohawks to a clear victory in the L.I. Industrial Nite Owl tournament that ended two weeks ago. Rudy punched out a high series of 642 in the first session while shooting 2366—a 197 average—for the 12 games in the tourney to pick up the "Outstanding Bowler" award.

The Mohawks, after running up a 221-stick lead in the first session, made it "no contest" with their heavy kegling in the remaining three rounds. When it was over at Mid Isle Lanes in Hempstead, the Mohawks carried a 523-pin advantage over runner-up Airborne Instrument Lab. The last time the Mohawks won the Nite Owl crown was in 1969.

Earl Schroeder contributed to that victory while picking up the tourney high-game prize for his 257. In the final, Dunkley hit 212-557, Schroeder, 520; Ernie Jenkins, 530; Hank Kwiatkowski, 201-516; Judge Locke, 214-217 (he had to leave in the final game to work on the F-14), and Walter Cooper, 167.

Incentive division honors (most pins over entering average) went to Newsday, with plus 469.

Also representing Grumman were the Hellcats, who finished in sixth place in the eight-team race. Big man in the final session for them was Howard Strohl, who threatened Schroeder's high-game mark with his 242-583. High scores in recent play for the 'Cats included Ray Beauchesne's 201-548; Ralph Laurino's 521, Ed Truglio's 508, and Marty Susa's 201-544.

In the third round, Dunkley again led the Grumman scoring with 200-574, which was followed by Schroeder's 234-569 and Kwiatkowski's 546.

GAA schedules tournament for champs

A tournament of champions, pitting team champions in all of the GAA-sanctioned bowling leagues on Long Island, has been scheduled for Sunday, June 6, at the Sheridan Bowling Academy in Mineola. If the top team declines, the second or the third ranked squad in the loop will be eligible.

The tourney will be set up for four bowlers on each squad (each team may have two alternates) and they will roll three games for the BIG team title on an 80 percent handicap basis. Total pinfall determines the winner.

Entry fee: $5 per team. In addition to the team title, there will be a total of 10 individual prizes.

Official rules may be obtained from the Athletic Association, Plant 28B, Ext. 2133 or 2269.

Bezas hits record 260 as Grumman loops near finish of season

Whenever you think you've got it made along rolls one of those ego-deflator types who knocks the pins from under you. Two guys did it recently. First came Tony Bezas, who knocked over Grover Hart's 255 tower with a ball-spinning 260. (Grieve a bit for Grover.)

First ace. **Ed Pellini of Plant 33 didn't waste any time in recording the first hole-in-one of the new season. Ed, chatting here with Mike Cherry of GAA, used a 9-iron to dunk his tee shot on the 125-yard seventh hole of Bethpage's Red course.**

The other big image-breaker was Jesse Zimmet of the Classics in the Aerospace league. John Dudonis had had his own way for quite some time with his league leading 257. Well, John, the terrible pressure's off: Your buddy Jesse just rolled by with a 258. Ed Lomot rolled 225-200-617 for high series, and Bill Swinson came home with a triple deuce. And to flip back to the Outpost loop, where Bezas had bested the best, there were some respectable scores: Tony Briganti, 223, Vic Martin, 222, and Roy Moser and Phil Kirubis, both with 217s.

Keglers from two leagues have kegled their last in this season. The Rockets league ran out of fuel as the Hemps squeezed by I. C. Demons in a photo finish. Oh the pain in that one! The Demons had been on top until they played the last night's games; and how tight the final was! In pins, well, just 20 apart for a full season's play. The closing averages tell the story: Hemps, 402.1, Demons, 402.0. Not even Joe Sorro's 288 effort, rolled earlier, frightened the Hemps . . . but they were on pins if not needles.

When the final pin fell in the Classified loop, the Sparkplugs and Jokers were still one-two; no surprises. But the Peenogees bashed their way into third place, jumping from sixth in an almost-Herculean effort. The pin-tumblers at the top of the heap—D. Giesemann, with a 234 and F. Lockhart with a 224-228-638—emerged from the ranks of teams other than the three leading in the standings.

Over in Trader, Lenny Rudis and El Gunther rolled matching high singles of 233, and just one pin behind was Chuck Gosline. John Logan scattered the wood for a 221, Dom Sansone for a 215, and Tom Wright for a 210. High series was a 605 by Frank Nelson.

For some reason, the birds in Nite Owl league chirp a lot in the 200s. Like last time around ,for instance: Earl Schroeder, 246, Ralph Laurino, 238, Al Moszkow, 224 along with a 203, Judge Locke, 222, Ed Truglio, 221, Marty Susa, and Bernie Doute, each at 212, Louie Sanfilippo, 206, and Hank Kwiatkowski, an even 200. . . . Neither the Strangers nor the Gulfstreams want to lose in the Red League: Each has an 11-0 points record. In total points over the bowling year, though, the spread in favor of the Strangers is well-nigh fantastic—137.5. Individual action was all Joe Kessler's, a wood-splattering 257.

The hot, close action in the Lunar League looked as though any team could be No. 1 in the final standings (any team, that is, except the Left-Outs —who were). Knowing that few people like a tie, especially after all of that alley work, one Felix Zorskis took his holey ball in hand and rolled a 551 series to lead the Cue-Sees to the summit. Hank Zembo of the Ball Busters scored high individual series (622) and George Demarest of the Four Flushers topped the singles with a 247 sparkler. And leave us not forget steady Steve Focardi of the Ball Busters: He copped high average, 177.

In the Wednesday Night Mixed at Babylon Bowl, set aside three lusty cheers for the Shadows, who danced into the light by clinching first place. As for individual highlighters, how about Pat Sabatelli's 207, Ella McMillan's 197 (and series high 545), and Barbara Rumsey's 180-473.

Tee time. **Winners in West Coast golf tourney got together at dinner to celebrate their lucky day on the links. Shown here are Terry Newitt, Mary Buster, Jim Bolwerk, and Neil Lockwood. That's Frank Farrell in the back.**

Hold tee party on Coast

SAN DIEGO, CALIF.—Though the weather was wet and windy, 18 golfers participated in the annual tee party held for Grummanites in this section of the country. The golf tourney, under the direction of Ron Folchetti, was held on the challenging par-72 Oak Glen course at Singing Hills, which lies east of here.

Headliners in the action included Jim Bolwerk, whose 84 earned low-net honors, Terry Newitt, runner-up, and Neil Lockwood, who finished third. Closest-to-the-pin award went to George Van Gaasbeck, and Mary Buster was named "duffer of the day."

GAA slates kickers tourney for June 15 at Bethpage Park

With most of the Grumman golf loops already started, the GAA tournament season gets under way Tuesday, June 15, when the spring kickers tourney will be staged over the Blue course at Bethpage State Park.

Registration should be made with Mike Cherry of GAA, Plant 28B. Entries will be accepted on a frst-come, first-served basis, as the field will be limited to the first 80 golfers to sign up.

The entry fee, $12 each, provides for greens fee, reserved starting time, a chance at various prizes, and a buffet dinner following play in the Bethpage club house. Cherry suggests that whenever possible golfers should sign up as foursomes, and appear at the first tee one-half hour before scheduled tee-off time to avoid losing starting position.

This is the first event of five tourneys scheduled by the GAA this season. There will be another kickers tournament—that one scheduled later this summer, and three Mixed Pinehurst outings starting late in June. Men and women are eligible for the kickers.

There will be low-gross prizes for men and for the senior division (over 50). The net for men and women and kickers' prizes will be decided by the Callaway handicap system. Those who are eligible for the senior division may inform Cherry at the first tee if they wish to compete in that division.

A golfer may win only one low-gross or low-net award. The kickers' drawing will include those who have scores between 70 and 80 after handicaps are deducted from gross scores. Prizes will be distributed following the buffet din-

Casual dress, naturally, is the mode at the dinner. Any more questions? Call Cherry, Ext. 2133 or 2269.

Making it a habit. **Grumman women's pin team picked up its fifth team title in the last six years in L.I. Industrial play recently. Captain Chin Thompson here accepts championship trophy from Bill Johnson of Security National Bank for teammates (L to R) Meg Sheridan, Bertha Siegl, Norma Frey, and Lynn Sowers.**

Lang earns solo table honors at Calverton, teams with Savene to cop doubles crown

Bob Lang raced through six opponents, losing but two games in the process, to win individual honors in table tennis play at Calverton. In the final, Lang edged Dave Zazeski, 17-21, 21-6, 24-22, to clinch the crown.

Earlier, Lang had clipped Ron Korth, 21-8, 21-4; Frank Rath, 21-8, 21-18; Ernie Maggi, 15-21, 22-20, 21-16; and Zazeski, 21-13, 21-12, before meeting Zazeski again in the finals.

The outcome was only slightly different in doubles competition. Lang won again, but with help this time. Nick Savene teamed up with Lang to sweep the tandem title in four straight matches, starting with a 21-10, 21-12 victory over Regan and McNash, and continuing their streak against Tupper and Ryan, 21-10, 21-12, and Pipp and Knipe, 21-15, 21-17. In the finale of the two-defeats-and-out tourney, Lang and Savene met Pipp and Knipe once again. This time is was 21-14, 20-22, 21-15, with Lang and Savene the accredited ping pong champs of Calverton.

They tried a round-robin tourney at the Plant 34 complex but it didn't matter much. Chek Yee won the singles title with a 5-0 record, including a 21-18, 21-5 victory over the defending champ, John Buettner. Of the 23 entrants participating in singles play, Yee was the standout, without a doubt.

Nobody shot him down in doubles, either, as he teamed with Ted Lee to run up a 3-0 record, capping that mark with a 21-8, 21-10 triumph over Pete Chachakis and Sam Sciglio in the finals. Sam and Pete had to be happy with the modest achievement of winning one game in the 21-10, 21-23, 21-14 semi-final loss to Chek and Ted.

It's all over for the year at Plant 33. After Gat Lee took the singles crown from Pat Courtney a couple of weeks ago, Courtney got together with Lionel Wellington to try and change his luck in doubles. He did. He and Lionel, after staggering to a 21-16, 30-28 victory over Pop Ceely and Dom Amerino in their first match, clicked off two more wins to win the championship. The last was a 21-17, 21-19 margin over Ed Paolini and Jim Bell.

Night at Shea

Hey, gang, those big Grumman nights at Shea Stadium are shaping up already. The Grumman Athletic Association has scheduled three this season, with the tab $2.75 for a reserved seat and $1.50 for return-trip bus fare. Tickets for the first night at Shea, Friday, July 30, against the Cubs, go on sale immediately at the GAA office, Plant 28B.

On August 27 and September 24, also Fridays, GAA has reserved tickets for contests with the Dodgers and Pirates. Tickets go on sale for those games later in the season.

Remember: immediate sign-ups for July 30. Any questions? Call GAA, Ext. 2133 or 2269.

Grumman girls add another title!

They did it again! The Grumman women's pin team leveled the opposition in the L.I. Industrial tournament, winning the championship trophy for the fifth time in the last six years. This year the edge was 417 pins, with Republic the closest opponent in the 14-team field. Back in '67, LILCO earned the championship crown.

Although Grumman didn't win either of the two top individual prizes—Claudia Geelmuyden of Liberty Mutual was 'Outstanding Bowler' with a 2172 total for 12 games and Joan Kizis of Franklin National rolled the high game of 245—it became apparent in the initial round that there wasn't anybody around who could challenge the defending champs for the title. They opened up a 148-pin lead in the opener, and raised that to 257 in the second four-game session.

Norma Frey of Grumman, who finished second in total pinfall with 2156, only 16 sticks behind the leader, paced the girls' effort, although she received strong support from captain Chin Thompson. Chin, a perrenial in this the big tourney for women of the L. I. Industrial community, knocked down 2132 pins, while teammates Lynn Sowers and Bertha Siegl closed with 2025 and 1949 totals, respectively.

Pan American earned Incentive division honors with a plus 651 pins rolled over its entering average, with Oxford Pandaflex second in that competitiion with a plus 459.

During the clincher two weeks ago at Mid Isle Lanes in Hempstead, Chin punched out a 213 and Norma hit 206. Norma had opened with 130—that practically blew her right out of contention for top bowling honors, but she came back with the 206, 183, and 190 to finish at 709 for the four-game set. But it was too late. In that final session, Chin had 714, Bertha, 682, and Lynn 624.

Way to go, girls!

Riders Wanted

ISLIP: Bay Shore, Babylon, via Sunrise Hwy., Rte. 109 to Bethpage plts., 7-4. JU 1-7826.

Ride Wanted

FREEPORT: To Plt. 5, 8-4:30. 868-9283.

Car Pool

HOLTSVILLE: To Plt. 6, 1 blk. L.I.E., 24 Blossom Ave. 289-5606.

For Rent

HOUSE: Carrabasset Valley, Me., new 3 bdrm., fully equip., chalet on river, wk., wkend, mo. 692-5296.

HOUSE: Sayville, 6 rm. brick cape, fenc. yd., lrg. plot, gar., ultra lrg. kit., 4 bdrm., fin. bsmt. w/bar, w-w, 3 appli., avail. 7/1, $300/mo. LT 9-4334.

HOUSE: Buckingham ranch, Strathmore at Stony Brook, 3 bdrm., 2 bath, 2 car gar., w-w, dishwash., unfurn., July 1 occup., $350/mo. 751-8733, after 6.

HOUSE: In Poconos, July-Aug., all-elec. appli., dish-wash., dispos., wash/dry., 2 lvl., 2 bdrm., 2 bath, lrg. fam. rm., liv. rm. w/firepl., scrn. porch, slps 8, sports, lakes, pool, teen club, tennis, $750/mo. 643-8493.

HOUSE: Weston, Vt., 3 bdrm., firepl., mod. facil., quiet country rd., nr. recreat. fac. 212 291-4891.

HOUSE: N. Massapequa, 7 rm., 3 bdrm., new kit. & bath, fin. bsmt., lrg. bkyd., 4 appli., 1-2 yr. option lease, 1 mo. secur., $350/mo. 731-0276.

Room: Patchogue area, furn., adj. bath, $125. GR 5-6129.

ROOM: Hicksville, furn., gent. only. 931-2044.

ROOM: Furn., pvt. bath & ent., lrg. & sunny, gent. only, suit. for 2. WE 1-3169.

BOAT: Motor & trlr., lgt. fgbl. skiff, positive flot., avail. day, wkend, or wk., reserv. taken. 724-2720, evgs.

COTTAGE: Manasquan, N. J., less than 2 hrs. Bethpage, 6 rm., 3 bdrm., screen. porch, on canal w/pvt. rock, 3 blks. ocean, dish. & uten. incl., no linens, avail. wk. or mo., Memorial thru Labor Day. 731-7931.

ROOM: W. Farmingdale, 15 min. to plts., gent. pref. CH 9-2873.

ROOM: 2 mi. to plt., pvt. ent., bath. PY 6-4210.

APT.: Bethpage, 6 rm., unfurn., ground fl., pvt. ent., $250/mo. lease & security. WE 5-0885, after 5.

TENT TRLR.: Camp., slps. 4, Universal auto hitch, avail. $6/day, $15/wkend. CA 1-3625.

Wanted

SHELVING: Steel w/frame, 5 to 6 shelves, 18 in. wide, 36 in. or long., 80 to 90 in. in hgt., will pick up. 724-5639.

ACCESS.: For pool tbl., cues, balls, rack, etc. 724-7169.

OUTBD. MOTOR: Evinrude or Johnson, 7½, 10 or 15 hp. 728-0994.

CHEVY ENG.: V-8, 283 or 327 c.i., gd. run. cond., will remove from car. 273-6239.

HDTP.: For '64 Alfa Romeo Giulia Spider 1600. G. Okun, Ext. 1592.

SHAREHOLDERS: Two girls to participate in summer house on Dune Rd., Quogue, 1,000 ft. from ocean, $200 ea., w/2 Grumman girls. 724-0313.

OUTBD.: 4 to 6 hp w/shift. NA 8-1481, after 6.

APT: 4.5 rm., pref. Sea Cliff, Glen Hd., Glenwood Land. area. 676-4352, after 8.

APT.: 3-4 rm., unfurn., Grumman vic. for yg. couple, Aug.-Sept. occup. TU 4-8859.

GUITARIST: Lead, for GAC Rock group, upcom. engage. 822-2621.

SMA: COTTAGE: Or cabin for summer rental, within 3-4 hr. drive from Bethpage MO 9-7513.

For Adoption

KITTENS: 4, 1½ mo. MO 5-6262.

KITTENS: All blk., half Siamese, house bkn., 1 male & 1 fem., 10 mo., 1 male, 2 wk. 421-3792.

Free

MISC.: G.E. Free-std. elec. range/oven; G.E. flat-plate ironer; Nat'l. elec. wall oven; 1 oil space heat., never used, just pick up. 271-1364.

Lost

WED. BAND: Man's gold, initialed W.S. MY 1-2636.

For Sale

BARRACUDA: '69 Fastback, 340 formula "S", auto., pwr. steer., disc bks., mtd. snows, air cond., $1,750. PI 2-4843.

CORVETTES: 2, '60, 1 327 conv., 3-spd., stereo; 1 nds. work, 2 tps., 283, 3-spd., best offer on ea. 588-5848, after 6.

HONDA: '66, 305cc, chrome tank, fenders, hdlgt., panels, 5,600 mi., $550. WE 5-3197.

HONDA: 50cc, elec. start., gd. tires & batt., $100. IV 6-4930.

HONDA: '65cc, 5,000 mi., make offer. Walter Kolody, Ext. 84175.

MISC.: Vespa motor scooter, gd. rubber, $100; 10 ft. Pram w/40 hp elec. start outbd., $275. 234-3620.

MINI BIKE: Rupp 3 hp, telescop. fork, exp. bk., split rims, chrome fenders, $120. 269-9592.

WASHER: Whirlpool, $40. 826-6261.

For Sale

SAILBOAT: 17 ft. Cape Cod Knock-about, lrg. open cockpit, seats 8 adults, set sails, wood hull, fbgl. btm., $495. 265-8438.

BOAT: 17 ft. fbgl. wood hull, new tilt trlr., 35 hp Johnson, controls, tarp & xtras, $400. 643-5267.

SAILBOAT: 16 ft. Rebel fbgl., alum. spars, stainless rig., dac sails, $750. 722-4769, evgs.

TRANS.: '65 VW for Beetle, $25. 938-3708.

PUPPIES: Mini Schnauzer, 8 wks., male & fem., docked & crop., reg., $150. JU 1-0003, after 4.

POINTER: Germ. shorthoir, male, AKC, 5 mo., all shots, breeder's pick of litter, housebkn. 473-1744.

MISC.: Westinghouse elec. auto. roaster-oven/broiler, see- thru- lid, port., cooks for 8, attach. & access., $25; 2 studio couches w/cov. & wedge, foam rubber pillows, $25/ea. or both $45. LI 1-4264.

BOAT: '70 Alpex Alummacraft, 50 hp Mercury elec. start, 15 hr., trlr., xtras, $2,000. LO 1-2994.

BOAT: '68, 18 ft. 7 in. T-Bird, 100 hp Johnson, Tee Nee tandem whl. trlr., rdy. for water, xtras, for fish. or camp., $3,000. WA 1-7234.

at your SERVICE

This is a free service to Grumman personnel for non-commercial advertisements, accepted on a first-come, first-served basis. Classified advertisements are carried in PLANE NEWS only on the basis that everyone replying to such advertising will receive fair and equal consideration regardless of their race, creed, color, or national origin.

Type or print ad on form available at Employees Service and Engineering counters, and send via interplant mail to PLANE NEWS, Plant 5, Bethpage. List home phone (with area code if outside Nassau or Suffolk). Limit: one ad per person per issue. No item under $10, no firearms or ammunition.

RETRIEVERS: Labrador, AKC, male & fem., blk. & yel., $150 & up. 277-3829, up to 9 p.m.

BASSET HOUND: Tri color, house bkn., AKC, gd. w/child., & cedar dog house, $100/both. 585-0932.

WIRE HAIR FOX TERR.: Docked, shots, paper train., male, fem., gd. w/child., $125. 266-1140.

DACHSHUND: AKC, shots, papers, mated champ line, 2 males, 1 blk., 1 brown, $100. 234-1281.

MISC.: Maple kit. cab., copper hardware, w/wh. formica.; 30 in. gas Caloric stove, copper tone w/30 in. Nutone hood.; snack bar w/2 wh. stools, reason. PY 9-6083.

FURN.: 2 scallop. leather tp. wal. liv. rm. end tbls., French, $65/ea. 543-2738, after 7.

BDRM. SET: Contemp., bkcase hdbd., swing-away twin, triple dress., 2 singles, ask. $200. 623-4046.

TV: 2 in. Zenith cons. w/remote cont., B&W, $50. PE 1-8008, after 5.

REFRIG.: '68, 14 cu. ft., wh., $30. 669-7067, after 4:30.

REFRIG./FREEZER: 14 cu. ft. Coldspot, wh., frost free, hinged on right, freezer on btm., $100. 698-0557.

CLOTHES DRY.: Gas Hamilton, work. cond., $25. MY 4-5370.

MISC.: Youth bd. w/spr. & Simmons matt., $20; Toro pwr. handle w/16 in. snow blower, $35. 333-5119.

STOVE: Hotpoint wall & counter tp. units, 6 yr., $30. 271-6261.

TEST EQUIP.: Radio & TV tubes. 884-5392.

WED. GOWN: Peau de soie, ¾ bell. sleeve, appliques, detach. train, sz. 10, never worn, $50. 368-4004.

MISC.: 24x4 Ultra-medallion pool, maint. free alum., o'sz. ¾ hp Lomart Diatomite filt., alum. ladder & vac., $380.; 35mm Argus C-3 w/leath. case, $20. AN 5-5737, after 5.

GAR. SALE: Apr. 23-25, furn., child. play equip., bikes, slide-trays, toys, gift items, reason., 4 Glenmark Lane, E. Northport. 368-4164.

CAB. CRUISER: 26 ft., 6 cyl. marine eng., all equip., rdy. to go., ask. $475. 666-5970.

CRUISER: 22 ft. Trojan, 135 Interceptor, slps. 4, hd., balley, nd. water pump & windshld., $500. 669-7168.

BOAT: 16 ft. Thompson, 75 hp Evinrude, elec. shift, pwr. tilt, tach, speedometer, clock, bilge pump, trlr., etc., $850. 265-0479.

BOAT: 14½ ft., 15 hp Evinrude, '67 Holsclaw trlr., $250. 585-8284.

SKI-BOAT: '64, 17 ft. Century Dart, 185 hp inbd., new cush., $1,400. 884-7310.

SKI-BOAT: '13 ft. plywood, '66 Sea Lion trlr., $250. SH 4-3288.

SAILBOAT: '17 ft. O'Day Daysailer, fbgl. hull, alum. spars, s/s stand. rig., roller reef., cuddy cab., 5 hp Evinrude outbd. w/Cruis-A-Day tank, $1,250. 724-9410.

BOAT: Super Sailfish, fbgl., used 1 yr., $275. HA 1-5558.

OUTBD.: '67 Mercury 50 hp, lg. shaft, elec. start, CD ignition, under 100 hrs., $475. George Esteil, 586-1352.

MISC.: 22 ft. mast, never used, varnish., lgt. wgt., hollow Sitka spruce, internal, 6 stainless halliards, $50; 2, 22 ft. 2x4 straight grain. Sitka spruce; $12/ea. 543-4035.

BOAT: 14 ft. alum. hull w/15 ft. TeeNee tilt trlr., no motor, used 1 season, $375. AN 1-4180.

RUNABOUT: 14 ft. MFG, fbgl., 9.5 Johnson outbd., xtras, $350. MY 1-4338, after 6.

BOAT: '66 fbgl. MFG, 19 ft., cab., 120 hp 1/O Mercruiser, canv., s-s, rodhold., compass, $1,750. 423-4131.

MOTOR: 25 hp outbd., lg. shaft Scott w/elec. start., auto. bailer, controls, generator, spare prop & 6 gal. tank, may nd. some wrok, $75. 423-3967.

MANIFOLDS: Exh. riser for Flagship marine eng., used 1 season, $95. AN 5-8683.

HOUSE: Huntington, 3 bdrm. split, 1½ bath, playrm., ¼ acre, air cond., dryer, 5¾% mtge., $31,500. HA 3-4888.

HOUSE: Bethpage, lrg. 8 rm. tri-split, 4 bdrm., 3 bath, recreat. rm., din. rm., eat-in-kit., lndry., bsmt., 2½ car gar. w/elec. dr., fire alarm, lrg. patio, corner plot in court, $46,000. 931-6533.

HOUSE: N. Central Islip, 3 bdrm. ranch, w-w in liv. rm., lrg. beam. ceil., fam. rm., full bsmt., attach. gar., fenc., $22,500. 234-6680.

HOUSE: East Meadow, 11 rm., 6 bdrm., 2½ bath, eat-in-kit., lrg. panel. den., multi lvl., prime area, gd. mother/daugh., low 50s. IV 3-8748.

HOUSE: Commack, 5 rm. ranch, 3 lrg. bdrms., liv. rm., eat-in-kit., w-w, s-s, blinds, dishwasher, dry., fin. bsmt., patio w/awn., $28,000. AN 5-4685, after 12 noon.

MISC.: 23 in. Magnavox TV, radio, AM/FM stereo, 4 spkrs., $200; 2 snows, L78x15 or 9:00x15, w/w, stud., guar., used 3 mo., $50; bus. prop., Shirley, nr. RR & Wm. Floyd Pkwy, 100x200, $4,990. 938-6140.

For Sale

HOUSE: Oyster Bay, 3 bdrm. brick split. fam. rm., 2½ bath, 2 car gar. w/auto. drs., full tiled bsmt., alum. s-s., o.h.w. 2 zone, blt.-in fire alarm., attic fan, 4¾% mtge., $49,000. WA 2-3860.

MISC.: Col. couch, Ethan Allan, cocktail & end tbl. 543-3221, evgs.

CAMERA: Nikkormat FS w/F/2 auto. Nikkor 50mm lens, elec. flash sync. to 1/125 sec., $125. 423-3967.

COINS: Silver dollar collect. in alubums, & U.S. proof sets, Franklin mint colect. of 200th anniv. of U.S. plus remain. subscrib. IV 6-3713.

PLYMOUTH: '61 Fury, 4-dr., 8 cyl., $100. AN 1-8803.

KARMANN GHIA: '69 VW, radio, new bks., mtd. snows, $1,700. 751-2230.

FORD: '66 GTA, conv., comp. rebit. 390 eng. & trans., ask. $800. M. Abrahamson, Ext. 3658.

BUICK: '67 Skylark, 2-dr. hdtp., auto., pwr. steer., air cond., poly tires, AM/FM, alarm, $1,495. 212 HA 8-4355.

OLDSMOBILE: '63 Holiday, 4-dr., rebit. trans., pwr. steer. & bks., H.D. trlr. hitch. 212 939-6155, after 7.

GTO: '68, grn., wh. int., blk. vinyl tp., poly tires, 8 trk. stereo tape, air cond., low mi. 757-1444.

CHEVROLET: '65 Bel Air, pwr. steer., auto., $650. 261-0512, evgs.

VW: '68 Bug, sun roof, radio, rear spkr., auto., 2 stud. snows, xtra whls., 14,000 mi. OR 1-4258.

CAMPER: New Starcraft & Borg-Warner travel trlr. JU 4-6633.

WAGONEER: '66 Jeep, V-8, 4wd, Warn hubs, pwr. steer. & rear wind., R&H, tint. gl., hitch, snows, low. mi., never plow., $1,500. 549-5613.

MOBILE HOME: '67, 12x50, unfurn., fenc. yd., patio. 598-3759, before 5 p.m.

SAILBOAT: 16 ft. Cape Cod Gemini, fbgl., twin bd., trlr., xtras, $1,300. 367-4118.

MISC.: Car roof rack, adj. tubular alum., $10; trlr. hitch, VW bdy. mount w/ball, $15. 543-4035.

ENG.: Rebit. MGA 1500, 5,000 mi., w/clutch, trans., drive shaft & full instr. panel, $150/all. 724-1796.

TIRES: 5 Uniroyal Rainmaster poly bias belt., G78x 15, less than 500 mi., $120. JU 1-2396.

HOUSE: Bohemia, 3 bdrm. ranch, w-w, full bsmt., gas w/humid. heat, attach. gar., 80x100 fenc. plot, $20,900. 589-8631.

PROPERTY: Islip Terr., 2 lots, A.A., all facil., nr. pkwy., RR, sch., will sell sep., $13,400. MO 7-5218.

DIN. RM. SET: Lime oak, tbl., 6 chrs., tbl. pads, buffet, $65. 731-1908.

GAS RANGE: Wh. 36 in. Kenmore, oven, broiler, stor. area, $50. 935-4214.

WASHER: 12 lb. hvy dty. Norge, 1 spd., nds. bk., $15. 757-0438, after 7.

FURN.: Contemp. uphol., chr. & match. ottoman, elec. blue slipcov., $50. 741-7698.

PUPPIES: Kerry blue terrier, 2 fem., 6 mo., perm. shots, non-shed., $200/ea. PY 6-9579.

OLDSMOBILE: '63 F-85 Cutlass, 2-dr. hdtp., pwr. steer., R&H, nds. minor trans. work, $200. 981-0098.

MERCEDES: '65, 190D, radio, air cond., snows, $1,600. 289-0563.

TR4A: '66, wire whls., indep. rear susp., radio, $875. 473-8677.

ROOF: Wh. hdtp. for '69-'71 Corvette, $100. FR 8-5390.

MISC.: Clear plastic auto slip covers, embossed, never used., $10; windows, 2, 4-pane, 1, 6-pane casement, $10/ea. 231-8442, after 6.

OUTBD.: '60, 18 ft. Shoup Princess, '66, 50 hp Mercury outbd., fully equip., $1,250. PY 8-6382.

BOAT: 18 ft. Glasspar, 40 hp Johnson outbd., trlr., xtras, $950. LI 1-8329, after 6.

VW: '67 Bug, new tires & whls., hders, sway bars, tach, snows, $875. 485-8525.

CORVETTE: '62, 327 c.i., 300 hp, 4-spd., $1,650. 724-5978.

CHEVROLET: '66 BelAir 4-dr., auto., R&H, air cond., 40,000 mi., $950. MO 5-1515.

COUGAR: '69 conv., pwr. steer., disc bks., auto., Michelin tires, low mi., $2,750. 212 961-1250.

JAGUAR XKE: '68, blue conv., 29,000 mi., $2,975. Ed Barragan, Ext. 84175.

PONTIAC: '66 LeMans conv., yel., blk. tp. & int., V-8, 326, pwr. steer. & bks. 541-205, after 5.

TV: 21 in. color, nds. tube, $75. 727-7831.

STEREO RECVR.: Scott FM, mod. 344B, 85w, wal. case, $115. Ed Casa, Ext. 7766.

For Sale

HOUSE: Bethpage Estate area, ¼ acre, 4 bdrm., maid rm., s-s, w-w, central air cond., gar., $15,000 Indscpg., fam. rm., Fla. type patio, fenc., o.h.w., appli., low tax., $50,000. 938-6140.

HOUSE: Roosevelt, 7 rm., 3 bdrm., fin. bsmt., alum. sid., 2 porch, 2 car gar., $24,300. 546-2394.

HOUSE: W. Islip, 4 bdrm., 2 bath, cape, w-w, formal din. rm., 19 ft. kit. w/dishwash., 24 ft. knotty pine game rm., 2 zone o.h.w. heat, 1/3 acre Indscpd., low tax., $32,900. 661-6583.

RUNABOUT: 14 ft. fbgl., new 40 hp elec. start Mercury outbd., best offer. MO 7-3931, after 5.

BOAT: 21 ft. Amer. Finn., '65, 90 hp, teak deck, fully equip., winter cov., $1,100. 223-2949.

CAB. CRUISER: 30 ft., slps. 2, Palmer 115 hp eng. 271-7422.

MISC.: '54 cust. cruis. skiff Isaacson, 31 ft., all cedar & mahog., slps. 3, galley, hd., twin Nordbergs, elec. bilge pump, man. pump, fish wells, depth sounder, other gear, orig. eng., deep cockpit, chain locker, $3,000; 1, 7.00x17 6 ply nylon tire, 800 mi., $15. 727-5185, after 6:30.

CB EQUIP.: Comstat 25B, 5 mo., w/turner & 2 mikes, field meter, ask. $125. JU 7-3223.

AUTO. GENERATORS: 4, 12v Delco Remy, $18. WE 5-0189.

MAGS: Geographic w/index '36-'70, best offer. FR 9-0163.

PUPPY: Basset hound, 5½ mo., AKC, housebkn., gd. disp., $45. 368-4164.

SAILBOAT: '67 Pearson Renegade, slps. 4, 9.2 hp Chrysler elec. start outbd., genoa, spin., dinghy, fully equip., many extras. 423-5595.

COUGAR: '69, auto., vinyl tp., air cond., AM/FM stereo, pwr. steer., mtd. snows, 25,000 mi., gar-aged, $2,350. 796-9406.

LAND: 40 acres, Walton, N. Y. AN 5-4940.

OBITUARIES

Plane News has received word that death has come to the Grumman personnel listed below. We extend sincere sympathy to relatives and friends.

LEO A. PIERRO died April 19 at the age of 52. He had been with Grumman 14 years, and he worked in Facilities Maintenance in Plant 6. His home was at 50 Reeves Bay Trail, Riverhead.

JOHN J. HOOSACK of Inventory Control, Plant 30, died April 21 at the age of 53. He had been with the Company since 1964, and he lived at 73 Cambridge Dr., Hicksville.

THOMAS P. CARNEY died April 28 at the age of 50. He worked in Vehicle Electronic Design Engineering and had been with Grumman 19 years. His home was at 636 Elmwood Rd., West Babylon.

MICHAEL H. MULLER, foreman of the Static Test Department, Plant 5, and a 37-year man, died May 1 at the age of 58. He lived at 8 Brentwood Pkwy., Brentwood.

SANDRA M. HANDSHAW of Flight Acceptance, Plant 7, died May 3. She was 23 years old and had been with Grumman five years. Her address was P. O. Box 451, Smithtown.

HERBERT G. SULLIVAN of Inventory Control, Plant 21, died May 6 at the age of 56. He had been with Grumman since 1942. His home was at 166 Dartmouth Dr., Hicksville.

LEONARD J. DUPREE died May 8 at the age of 56. He worked in the Medical Department, Plant 28, and had been with Grumman since 1965. His home was at 2 W. Florida Ave., Copiague.

PLEASANT H. WHITING of Heat Treat, Plant 3, died May 10. He was 61 years old and had been with Grumman 28 years. He lived at 1122 Udall Rd., Bay Shore.

For Sale

DODGE: '67 Dart, 4-dr. sed., 6 cyl., blue, auto, pwr. steer., R&H, low mi., $950. 681-2986.

RAMBLER: '63 Classic 4-dr., pwr. steer., R&H, auto., new tires, snows, $200. 273-4315.

WAGON: Late '67 Pontiac Catalina, 9 pass., $1,495. F. Gabreski, Ext. 6150.

HOUSE: Pt. Jeff. Sta., 3 bdrm. ranch, oil heat, air cond., w-w, lrg. den/w/fiepl., din. rm., attach. gar., cement boat port, heat. full bsmt., above ground pool, 1/3 acre wood. plot, $29,000. HR 3-4642.

BDRM. SET: Mod. 5 pc., dbl. bd., box spr. & matt., 2 ngt. lmps, 6 mo., $300. 731-0276.

CHANDELIER: 16 bulb star type, brass w/candelabra bulbs, approx. 22 in. wide, $20. CH 9-4007.

KIT. SET: Wh. & gold trim formica/leather tp., 4 chrs., 6 mos., $100. 731-0276.

MISC.: Sears 5 hp rid. mower, $50; lawn sweeper, $10; manual mower, new, $15. 473-5841.

AIR COND.: Hot Point BTU 10,000, $100. 731-0276.

PONTIAC: '62 Tempest conv., 46,000 mi., R&H, pwr. steer. & bks., new rear wind., recent o'haul, ask. $250. 221-0623, after 5:30.

BARRACUDA: '70, wh/blk. vinyl tp., air cond., pwr. steer., lgt. pack, bkt. seats, cons., xtras. PE 5-1986.

IMPALA: '70, 4-dr. hdtp., gold w/blk. int., V-8, turbo hydra., pwr. steer.. bks., & wind., air cond., rear defrost., spec. susp., deluxe int., posi., stereo tape, snows, 12,000 mi., still under 50,000 mi. warr. 541-4435.

OLDSMOBILE: '59, 88, 4-dr. hdtp., pwr. steer. & bks., auto., new batt. & gen., recent tuneup, $200. 681-7338.

CHEVROLET: '67 Impala, dk. blue, 4-dr., vinyl hdtp., V-8, auto., pwr. steer. & bks., R&H, $1,300. 295-3684.

CORVAIR: '65, new tires, batt. & muff., $250. AN 1-0975.

CHRYSLER: '69, 2-dr. h'tp., fact. air cond., R&H, $2,775. WE 1-2508, after 5.

HOUSE: Selden, 5 rm., 60x200 plot, $16,500. 212 4070.

WAGON: '68 Pontiac Exec. Safari, 6 pass., 290 hp, 400 c.i., pwr. disc bks., pwr. steer., roof rack, air cond., posi rear, pwr. rear wind., radio, 4 fbgl. tires, wh., 35,000 mi., warr. 623-9431.

CORVETTE: '59, new 350 c.i., 4-spd. trans., new paint & uphol., more options. AT 9-2411.

STA. WAG.: '63 Chevy 9 pass., 8 cyl., $225. 273-2568, 6-9 p.m.

CORVETTE: '68 conv., 427 c.i., 390 hp, 3.08 posi, auto., pwr. steer. & bks., AM/FM, '69 btn. tuft int., 2 tps., $3,200. 921-0262.

CADILLAC: '68 pwr. bks. seats & winds. all leather int., air cond., 6-way conv. seats, snows, 27,000 mi., $3,300. LO 1-8530.

CHEVELLE: '68, 2-dr. Malibu, pwr. glide, blk. vinyl tp., push btn. radio, rear spkr. & ant., posi, rear defrost., new w/w & bumper guards, $1,495. 822-2936.

CORVETTE: '68 conv., 327 cid, 350 hp, 4-spd., air cond., remov. hdtp., AM/FM, pwr. steer. & disc bks., $2,800. 727-0306.

MUSTANG: '67, V-8, pwr. steer., orig. owner, $1,275. 423-2698.

AUSTIN: '69 Amer., auto., R&H, $750. 587-5068. after 5:30.

MISC.: '64 Chevy & '61 Lark conv., running but nd. work, $100/both. 549-3395.

MISC.: '63 Karmann Ghia VW chassis & 1200 eng., new front bks., king pins & link pins, $175; 2 snows & whls., $15. 691-2807.

MOTORCYCLE: '70 Yamaha, 250 Enduro DTI-C, 3,000 mi., xtras, $675. 931-5065.

MISC.: '57 Plymouth eng. flat hd., 6 cyl., auto., fact. rebit., 10,000 mi., $25; 4, 750x14 tires, $15. 281-7885, after 5.

MOTORCYCLE: '47 Harley-Davidson w/tank shift, rebit. motor, new batt., new paint. 724-0386.

MOTORCYCLE: '65 Yamaha, 250cc, 5-spd., $250. 277-1029.

TIRES: 5 Pirelli radial, 165SR 15, mtd. on Volvo whls., 8,000 mi., $150. 691-5550.

TIRES: 2, 650x13 tubeless, mtd. on Ford whls.; 2, 13 in. Corvair whls., $10 for all. 271-4486.

HOUSE: Bethpage Estates, 4 bdrm. col. ranch, maid's rm., playrm., fam. rm. w/beam ceil., cent. air cond., s-s, w-w, drapes, 4 appli., Fla. patio, Indry., tiled floors, stone walls, gar., 2 bath, 2 zone o.h.w., ¼ acre, $16,000 Indscpe., $55,000. 938-6140.

HOUSE: Smithhaven, 4 bdrm. ranch, 1 yr., brick/cedar, panel. den w/huge firepl., din. rm., eat-in-kit., dbl. gar., fenc. yd., gold w-w, nr. Mall, Indscpd., dishwash., $42,500. 585-6994.

For Sale

HOUSE: N. Hicksville, 4 bdrm. cape, 2 bath, o.h.w., fin. bsmt. w/bar, gar., prof. landscp., nr. stores, & RR, Jericho sch. dit., $35,000. WE 1-4971.

HOUSE: Bethpage, 3 bdrm. ranch, air cond., eat-in panel. kit., din. rm., raised cov. patio off kit., attach. gar., appli. PE 5-0857.

HOUSE: 8 mi. from Bethpage, 7 rm., 2 story col., 1/3 acre, Indscpd., bsmt. & gar., Huntington sch. dist. 5, xtras, $32,900. 643-7501.

GUEST HOUSE: Atlantic City, N. J., comp. furn., 14 rm., front porch, 1½ blks. from boardwalk, $18,000. 212 649-1022, bet. 9-1 p.m.

HOUSE: Amity Harbor waterfront, 3 bdrm. split, gl. encl. patio, o.h.w., w-w, panel. liv. rm., new 40 ft. bulkhd., Indscpd., fenc. bk. yd., all appli., $39,000. 842-9190.

HOUSE: Brentwood, nr. church, bank, shop, & sch., 3 bdrm. split ranch, fam., mud, din., rms., encl. patio & yd., patio lgts. 427-2668.

HOUSE: Port Jeff. Sta., 3 bdrm. ranch, 2 bath, huge den & firepl., full bsmt., cent. air cond., appli., carpet., xtras, $33,000. HR 3-9563, after 5.

HOUSE: W. Islip, 1 acre, waterfront, bch. slips, 4 bdrm., 2 bath, liv. rm. w/firepl., din. rm., eat-in-kit., all appli., fin. bsmt. w/bar, o.h.w., w-w, 2 car gar., low 60's. MO 9-0390, evgs.

BOAT TRLR.: Tilt, new axle, whls. & tires, $150. RO 4-1304, after 5.

BOAT: 16 ft. Thompson, 40 hp Scott elec. start., remote controls, Navy tp., winter cov., 2 gas tanks, tilt trlr., run. lgts., $350. WE 5-6626.

BOAT: 18 ft. Cruiser Inc., wood, '69 Holsclaw trlr., '68, 55 hp Evinrude, three 6 gal. gas tanks, rdy. for water, $1,150. WE 1-2172.

BOAT: 30 ft. Barthelow, flybridge, 215 Gray Marine, kitchenette, S-S, gib pole, outriggers, bunk, fish box, xtras, $3,000. MY 1-7861, after 6:30.

CHRIS CRAFT: '66 Cavalier, 27 ft., 185 hp w/200 orig. hrs., slps. 4, fully equip., S-S, hd., galley, full canv., rdy. for water, $5,300. 354-0994.

CAB. CRUISER: '64 Trojan, 24½ ft., 195 hp Gray Marine, lapstrake, compass, depth find., xtras, low hrs., $2,900. 929-6261.

SAILBOAT: Schock 25, LOA 25 ft., keel, fbgl., Genoa, main jib, spinaker dac sails, 2 bunks, hd., 3 hp Evinrude, fold. yachtwin, 8 cush., cockpit cov. 751-0959.

BOAT: Sears 12 ft. alum., Sears 3.5 hp outbd., 2 gal. tank, xtras, $200. 757-3420.

BOAT: 15 ft. Beachcomber/MFG w/80 hp Johnson, $850. 749-1229.

PRAM: '70, 10 ft. alum., $65. 589-8479.

RUNABOUT: '17 ft. MFG fbgl., 40 hp Evinrude, new shipmate trlr., xtra. tanks, props, Navy tp., full cov., access., $875. 273-4657.

BOAT: '71, 12 ft., 7 hp motor, trlr. & all access., $350. 732-1950.

CAB. CRUISER: 26 ft., depth find., compass, spotlgt., hd., galley, 95 hp 2:1 reduc., Chris Craft eng., cedar plank. Carvel hull, recent. repaint., rdy. for water, $1,100. HA 3-4011.

BOAT: 14 ft. fbgl. w/windshld., steer. whl. & controls, live bait well, 28 hp Johnson, tilt. trlr., rdy. for water, $450 w/2 - 6 gal. tanks. 928-1711.

PUPPIES: Golden retrievers, 6 wk., AKC, shots & wormed, $125. 333-2173.

PUPPIES: Labrador retrievers, blk., AKC, pure bred, lrg. healthy, whelp. 4/9, $100-$125. 423-9127.

KITTENS: Siamese blue point, Grand Champ sire, $50-$75. 546-6537, after 5.

KITTENS: Siamese, born 3/16, $20. 549-4069.

PUPPIES: German shep., sire U.D. breed winner, dam, champ Brix daughter, shots, guar. 732-3552.

PUPPIES: Irish setter, AKC, show qual. w/champ lines, father blue ribbon, mahog. color, bred for temp. & bone struct. 826-9061.

SURF BD.: 9 ft. 8 in. Challenger, $75. like new. Call Alex, 516 546-6194 after 7:30 p.m.

DIN. RM. SET: Oil. wal., tbl., 2 leafs, 6 chrs., 6 ft. credenza, $225. PI 7-1831.

DIN. RM. SET: Contemp., tbl., pads china cab., 6 chrs., $150; & 2 prom gowns, 1 pink, 1 blue, $25/ea. 691-7219.

BDRM. SET: Mahog., dbl. bd., dress., vanity, 2 mirrors, chest on chest, matt. & box spg., $75. 489-9389.

BED: Full sz. Beautyrest, matt. & box spg., $50. 543-3784.

FURN.: Match. end tbls. & coffee tbl., mahog., $40; 2 o'stuff. chrs., $10/ea. WE 5-3999, after 5:15.

MISC.: 3 fold bd., $10/ea.; sumpump, $15; paint sprayer, 50 lbs. contin. pressure, w/containers, $35. 749-1229.

For Sale

STEREO: Fruitwood, French Prov., Harman- Kardon amp, Jensen spkrs., Garrard chgr. 541-1733.

DISHWASH.: Port. Lady Kenmore, 1 yr., $100. CH 9-5984.

REFRIG.: 12 cu. ft. G.E., avocado, 1½ yr., ask. $120. 473-7703, after 5.

DISHWASH.: G.E. Mobile Maid, nds. work, $25. 277-3435.

MISC.: Ital. recliner, brown/gold, $30; sz. 7 roller skates w/case, $10; 35mm slide proj., $10; 15 in. whls., 2, $10. 681-9588.

MISC.: Maple china cab., $85. 724-6441.

CUSHIONS: 4 foam, xtra thick sofa-sz., $10. PE 5-4161.

MISC.: 2 alum. child. bch. chrs.; conv. couch; nylon carpet., 12x18 ft.; Danish chr.; mod. coffee tbl.; tbl. lamp; 12 in. tricycle; bowl. ball/bag; Dormeyer deep fry.; Nat'l. meat slicer; air hassock, reason. 212 TW 6-4132.

VW: '59, new tires, gen., bks., valve job, gd. bdy., $200. CH 9-5695.

OLDSMOBILE: '66, F-85, 4-dr. hdtp., V-8, air cond., auto., pwr. steer., snows, $850. 212 372-5173.

VW: '66 Fastback, snows, radio, new bks., 44,000 mi., ask. $875. 921-3076.

T-BIRD: '63, pwr. steer. & bks., 390, V-8, new carb, coil, alternator, shocks, fuel pump, muff/tail pipe, just tuned, $350. GR 5-4051.

VW: '68, wh/blk. int. PY 8-9297 after 5 p.m.

VW: '70 Variant sed., European mod., 12,000 mi., $2,075. MY 2-5126.

FIAT: '70 red Spider 850 conv. 212 677-8897, evgs.

ALFA ROMEO: '67 GTV, 5-spd., dual Webers, FM/AM/SW, driv. lgts., 39,000 mi., $1,900. 212 671-2021.

FORD: '64 Fairlane wag., 3 seats, pwr. steer., auto., rebit. V-8, 289, xtras, $500. CH 9-2228.

T-BIRD: '62 lgt. blue Ford, auto., $550. 585-1692.

CORVETTE: '67, 427 c.i., 435 hp, 2 tps., AM/FM, 4-spd., tape deck, 5 new tires, MT mags, MT valve cov., close ratio stick & steer., disc bks., 35,000 mi., $2,850 or best offer. 785-8528.

PLYMOUTH: '65 sed., 6 cyl., std., wh., 2 new snows, $375. MO 9-8767.

FIAT: '70, 124 sport coupe, grn., 10,000 mi., 5-spd., mags, FM & stereo tape, best offer. 483-6571.

PLYMOUTH: '69 Belvedere, 2-dr. sed., 250 c.i., 6 cyl., auto., pwr. steer., R&H, $1,600. 481-2654, after 6:30.

VW: '66, new clutch, muff., tail pipe, eng. mts., valve job, bks., & tires, $850. 486-7605.

MOTORCYCLE: Ducati, 350cc, 5-spd. hi-bars, kick start, $350. MO 5-6262.

HONDA: 65cc, orig. owner, 5,000 mi., make offer. Walter Kolody, Ext. 84175.

YAMAHA: '65, 250cc twin st. Scrambler, 5-spd., 320x18, dual carbs, $320. MY 2-4372.

HONDA: '70 CB350, cust. seat, hi-bars, $775. OV 1-1560.

STOCK CAR: '38 Chevy, mod. Sportsman, rework. 327 c.i., Chevy eng., has run Islip & Riverhead tracks, rdy. to race. 667-3893.

plane GRUMMAN news

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Navy gives go-ahead to make F-14 operational flight trainer

For the first time in its history, Grumman is designing and fabricating an Operational Flight Trainer (OFT).

Under Navy contracts, three OFTs will be built. Two will be delivered to the Naval Air Station in Miramar, Calif., the third will go to Oceana, Va.

"We got the initial contract award to design the OFT in late December last year," says Dean Swain, who manages the Integrated Logistic Support (ILS) Program. "OFT, put simply, is an on-ground aircraft simulator to train Navy pilots."

The OFT not only trains the pilot but can be integrated with the Missile Control Officer trainer for total F-14 air crew training. The MCO trainer is manufactured by Hughes Aircraft. The computer reads out pilot training "flights" in real time.

Says Fred Treubig, deputy Training manager for ILS, "The essential job is to familiarize Fleet pilots with the flight characteristics of the F-14, including all of the normal and emergency procedures. The computer monitors any deviations from set parameters, giving the pilot and his instructor a tangible record of each simulated flight. In that way, when the pilot flies his first live mission he knows the aircraft thoroughly."

In training, the pilot of the OFT has before him the exact controls, indicators, displays, and so on that are in an actual Tomcat. Training covers such items as preflight checks, starting procedures, navigational and instrument flight procedures, aircraft flight control, communications management, seat ejection procedures, and emergency systems management.

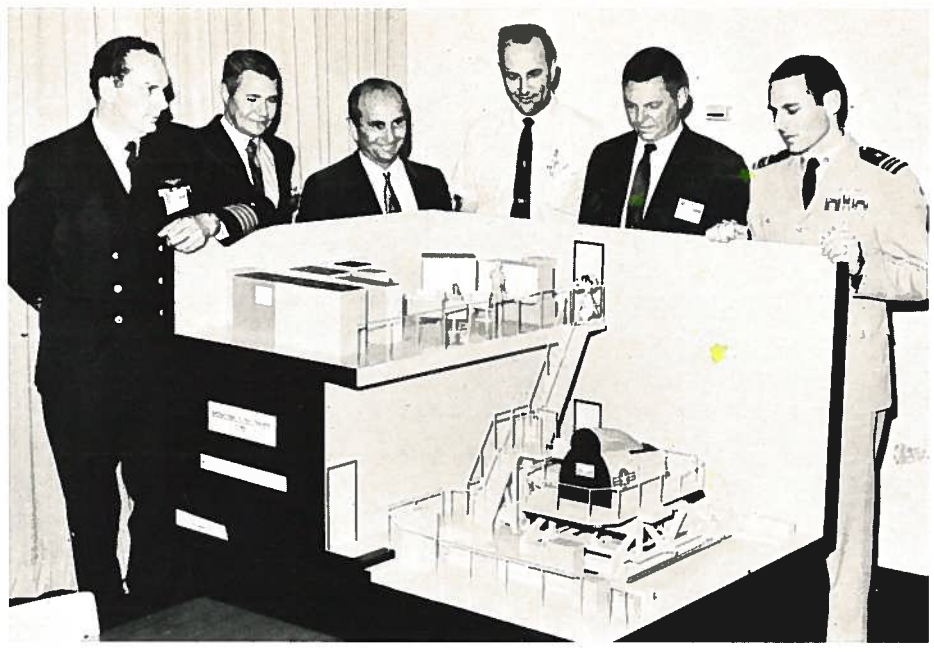
Simulated flight

As the OFT manager Fred Hartman explains, the simulator has four areas: one for the pilot (the cockpit), one for an instructor, a computer, and an associated power, cabling, and electronics section. The realism includes a simulated cockpit, mounted on a motion base, that provides for limited pitch, roll, vertical motion (heave), and lateral motion (yaw). It's the closest thing to flight that a pilot can get.

OFT Engineering Manager Don Nelson of ILS adds that the instructor can plot out more than the typical in-flight attitudes: He can also program a malfunction and see how a pilot handles it. And of course, when he plots a malfunction, the pilot will also be tackling any other anomalies flowing from the original malfunction.

The first major milestone in the development of the OFT came late last month when a Navy team visited Grumman to evaluate the full-scale portion of the instructor's station as well as a 1/10-scale model of the OFT arrangement. As a consequence of the team's in-depth review, Grumman received approval of the design, which now permits fabrication of the OFTs. Components will be tested in Plant 4 late this year. Systems integrtaion is to be completed early in '72.

"We believe we're over the big hump," says Treubig, "but we also have to realize that timely delivery of the OFTs to the Navy is necessary in order to assure aircrew proficiency."



Trainer mock-up. Late last month Navy personnel reviewed a full-scale and 1/10-scale mockup of Grumman's Operational Flight Trainer to be used in pilot training. Navy review board included (L to R) Capt. W. Dale Williamson, CNO; Cdr. F. J. Pester, NASC, chairman; Tony Vigliotta, Chuck Kimball, and Cdr. Chuck Waring, all of the Naval Training Devices Center; and Lt. Cdr. Joel Graffman, NASC, F-14 Program manager. (Photo by Bob Settles)

Anti-technology wave slows research, threatens future in science

From the pen of Lawrence Lessing has come a passionate but cleanly reasoned cry against those who would erect giant STOP signs along the roads of science and technology.

Indeed, Lessing, in the March issue of Fortune, argues that a superfluity of "stop," "yield," "detour," and kindred signs has already slowed the pace of research and science to an ignominious crawl—a crawl that may well jeopardize U. S. primacy.

"Technology is pictured as a powerful juggernaut, with an internal momentum of its own, relentlessly pressing on with irresponsible developments, out of control," he says. "On the other hand, this juggernaut is seen to be so weak that it is suffering all sorts of breakdowns—in power, transportation, and telephone services in our cities, for example. In one breath, science is said to be progressively more abstract and irrelevant to society; in the next, it is argued that this 'irrelevant' activity is a threat that must be curbed."

He continues: "Almost as reflex, funds have been damagingly cut in such basic areas as the life and medical sciences, which could reduce costs and care, while a large amount of advanced but abstract technology, which could begin to solve the problems of overcrowding, energy, pollution, transportation, and waste that cloud men's sky and vision, is going neglected."

Why the attacks? Lessing suggests misunderstanding, growing complexity, unnerving change, cost factors, some excesses of science, a Rousseau-type urge to return to nature, and even "a whole new demonology of science and technology." Paradoxically, he believes, the anti-science "culture rests squarely on those electrical sciences that power its amplifiers, electric guitars, and stereo rigs, and on the pharmacopoeia of chemical agents that give it instant vision. . . . It does not eschew motorcycles or motorcars. It accepts, in other words, the science and technology that please it, but would destroy those that do not."

Threaten entire fabric

And he says what has long needed saying:

"But science is indivisible, a seamless web of accumulated knowledge, and to destroy a part would rip the whole fabric. The beneficial and pleasing effects of science cannot really be separated from the potential harms."

The real need, Lessing suggests, is balance, a sense of values that prevent miscarriages, and he points to two of those—the "continuing Indochina war" and the "environmental crisis."

What is very disturbing to Lessing is a real and steady decline in budgets for science and development. He agrees with Robert Loewy, dean of the College of Engineering and Applied Science at the University of Rochester, that "Despite our nation's purported lead in science, the U. S. is only coasting on an advantage we have had since World War II." During that war and immediately after it came "antibiotics, atomic power, cryogenics, computers, jet planes, rocket vehicles, radar, transistors, masers, lasers, and other products that became the new industrial face of the mid-century. More important, out of the war came the impetus to get the U. S. fully engaged in doing basic science of its own."

Then a slump set in. As the Federal programs for R and D grew, successive Congresses and Administrations either cut budgets excessively, or so widely dispersed funding that strong research efforts sagged; in addition, the "practical" emphasis smothered "the more tenuous regions of basic research. . . . "

As a consequence of some unhappy appointments, "Nixon's relations with the scientific community were somewhat poisoned," but, as of last summer, a new science adviser is aboard, Dr. Edward E. David Jr., formerly of Bell Labs. "David faces two hard tasks: reassessing national science priorities and establishing better communications between the scientific community and the White House," says Lessing. And he has to do that in the face of the so-called Mansfield Amendment, "which ordered the Defense Department to cut off all research not related to specific military operations. Since the times of Archimedes and Leonardo da Vinci," Lessing asserts, "scientists have aided military invention to protect their societies, and in a still dangerous world the military needs a reasonable amount of basic research, reasonably applied, to keep its technology from going sterile."

Cites need for effort

Lessing then goes on to identify some of the areas in which immediate attention is required:

- High-energy physics, where Europe is leading the way with "Big Machines for investigating the sub-atomic properties of matter. From one of these machines in Italy. . . . came the report of a discovery. . . . of what may be a new phenomenon in the creation of matter from energy, which seems to go beyond present physical theory, and which may herald the tapping of the most powerful inner force in nature."
- Radio astronomy, where the U. S. is lagging as such nations as "England, Germany, Holland, Russia, and even India" are in the race studying quasars and pulsars.
- Conventional energy research, where the Soviet Union is "starting up the first large-scale, prototype magneto-hydrodynamic or MHD electric plant. . . . "
- Plasma physics, where the Soviet made a breakthrough "in the containment of thermonuclear power" which could be an "almost limitless, pollution-less source of energy. . . . "
- Space science, where we're ahead today but in danger of running second.
- Transportation, in which Europe and even Mexico are doing more in rapid transit than we are.
- The life sciences, where enough has been done to suggest that we could work biological miracles—if we got at it.

These critical areas of effort, and many more, deserve fast attention, even though the organizational problems of how best to proceed remain tangled. Says Lessing: "In the last analysis, the organizational form is probably less important than the spirit in which any such undertaking is launched. On the record of recent years, it is hard to be optimistic about the spirit. We can only hope the strange and irrational assaults on U. S. science end soon."